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U.S. Department
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TRANSPORTATION SCIENCES CENTER
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Buffalo, NY 14225

CALSPAN ON-SITE SEAT BELT FAILURE INVESTIGATION
CALSPAN CASE NO. 94-41
VEHICLE: 1992 GEO METRO CONVERTIBLE
LOCATION: SOUTH CAROLINA
CRASH DATE: [redacted] 1994

Contract No. DTNH22-94-D-07058

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

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On-site investigation of a front-to-side crash that involved a 1992 Geo Metro. The driver's side lower seat belt anchorage separated from the sill which allowed the driver to submarine the deployed air bag and load the steering wheel rim which resulted in a fatal liver injury.

16. *Abstract*
This on-site investigation focused on a 1992 Geo Metro convertible that was involved in a front-to-side impact sequence with a 1994 Ford Explorer. The 31 year old female driver of the Geo was restrained by the 3-point lap and shoulder belt system. She responded to the frontal impact force by initiating a forward trajectory and loading the belt webbing. The lower seat belt anchorage bolt separated from the threaded fitment with the sill which allowed the driver to submarine the deployed driver's side air bag and load the lower steering wheel rim with her abdominal area. As a result of steering wheel loading, the driver sustained an avulsion of the upper third of the liver with massive multiple stellate lacerations (AIS-5) and a ruptured spleen (AIS-4). She subsequently expired during surgery of exsanquination.

17. *Key Words* Front-to-side impact configuration Lower seat belt bolt separation Submarine deployed air bag Massive liver injury with exsanguination	18. *Distribution Statement* General Public

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TABLE OF CONTENTS

CALSPAN ON-SITE SEAT BELT FAILURE INVESTIGATION
CALSPAN CASE NO. 94-41
VEHICLE: 1992 GEO METRO CONVERTIBLE
LOCATION: SOUTH CAROLINA

SUMMARY

This on-site investigation focused on a 1992 Geo Metro that was involved in a moderate severity front-to-side crash with a 1994 Ford Explorer. The lower outboard anchorage of the left front manual belt system separated from the floor as the driver responded to the frontal impact force and loaded the belt webbing. She continued forward, submarining the deployed air bag and loaded the lower steering wheel rim which resulted in multiple stellate lacerations of the liver (AIS-5) and a ruptured spleen (AIS-4). The driver was transported to a local hospital where she expired due to exsanguination during surgery.

The crash occurred on a wet asphalt road surface during daylight hours in [redacted], 1994. The straight and level segment of roadway was posted with an 89 km/h (55 mph) speed limit. A private driveway intersected the roadway at the crash site.

The 1992 Geo Metro convertible was equipped with a supplemental driver's side air bag system which deployed during the crash sequence. The vehicle's passenger compartment consisted of two front bucket seats and a cargo area behind the seat backs. The front seated positions were equipped with continuous loop lap and shoulder belt systems. The belt webbing extended from the top of the lower B-pillar due to the convertible design, and retracted onto an inertia activated retractor. The lower anchorage for the lap belt segment of the webbing was bolted to the vertical surface of the sill, forward of the B-pillar. The latchplate subsequently fastened into a center mounted buckle assembly.

The 1992 Geo Metro was initially purchased as a new vehicle by the original owner on [redacted] 1993. This owner returned the Geo to the dealership on three separate occasions for minor repairs of non-safety related items. The vehicle was subsequently returned to the dealership as a trade on a new vehicle by the original owner and was resold in July, 1994, to the owner at the time of the crash. The current owner had owned the vehicle for approximately 3 months prior to the crash. There was no recorded dealer service records for the Metro following the resale transaction. At the time of the crash, the vehicle had a odometer reading of 42,593 km (26, 467 miles). The Geo was manufactured on 7/92 and was identified by vehicle identification number JG1MR3367PK (production number deleted).

The driver of the Geo Metro was a 31 year old female with a height of 152-155 cm (60-61") and weight of 48-52 kg (106-115 lbs.). She was identified as a friend of the current owner, therefore her experience with the vehicle was unknown. The driver was returning to her residence with her 4 and 6 year old sons positioned in the cargo area behind the front bucket seats. These positions were not designated seated positions within the vehicle, therefore no belt systems were available.

The driver of the Geo Metro was traveling in a southerly direction at a police estimated speed of 89 km/h (55 mph). She was traveling with the convertible top in the up position with the headlights illuminated and the windshield wipers in the on-position due to the light rainfall. A 1994 Ford Explorer was positioned at the mouth of a private driveway located at the west (right) road edge. The driver of the Ford Explorer initiated a left turn out of the driveway to proceed in a northerly direction. A third vehicle, a 1981 Dodge van, was traveling in a northerly direction on an approach to the impending crash site.

The full frontal area of the Geo Metro impacted the left passenger side area of the Ford Explorer. The Geo sustained a maximum crush value of 43.5 cm (17.1") that was located on the bumper reinforcement bar 34.3 cm (13.5") inboard of the left front corner. The Ford Explorer was not inspected, however, a maximum crush value of 20.3 cm (8.0") was estimated from the police photographs. Resultant directions of force were within the 01 o/clock sector for the Geo and 10 o'clock for the struck Ford with respective Collision Deformation Classification (CDC) of 01-FDEW-3 and 10-LPEW-3. The damage algorithm of the SMASH program computed velocity changes of 35 km/h (22 mph) for the Geo and 16 km/h (10 mph) for the Ford Explorer. As a result of the crash, the Geo's driver's side air bag system deployed.

The Geo was rotated approximately 45 degrees in a counterclockwise direction and came to rest diagonal to the southbound travel lane. The Ford Explorer continued across the northbound travel lane and came to a controlled stop on the grassy area adjacent to the east edge line. The driver of the 1981 Dodge van detected the crash as he was traveling in a northerly direction at a driver estimated speed of 80 km/h (50 mph). He subsequently braked and steered in a clockwise direction onto the east road edge to successfully avoid contact with the involved vehicles. His vehicle was not damaged and was driven from the crash scene while the Geo and Ford Explorer required towing.

The driver of the Geo Metro convertible initiated a forward trajectory in response to the frontal impact. The anterior aspects of her forearms were contacted by the deploying driver's side air bag which resulted in an abrasion with contusion of the distal anterior right forearm (AIS-1). Her left hand and wrist subsequently impacted the windshield which cracked the laminated glazing and resulted in a small laceration of the dorsal aspect of the left middle finger (AIS-1), multiple contusions of the knuckles of the left hand (AIS-1), and an abrasion of the dorsal left wrist. The driver's face contacted the deploying air bag which abraded her chin (AIS-1) and produced a hematoma of the left face (AIS-1). Makeup and lipstick transfers evidenced the facial contact with the air bag.

The driver's torso and abdominal area loaded the manual belt webbing. The shoulder belt webbing compressed a nameplate into her chest which resulted in a horizontally oriented hematoma with abrasion (AIS-1) over the left breast. The lower outboard anchorage of the lap belt separated from the sill which allowed the driver to continue forward and submarine the air bag and steering assembly. Her abdominal area loaded the lower steering wheel rim which resulted in a abdominal wall abrasions (AIS-1), an avulsion of the upper third of the liver with massive stellate lacerations of the liver (AIS-5), and a ruptured spleen (AIS-4). Her abdominal loading did not deform the

steering wheel rim, however, the loading was transmitted into the steering column which compressed 4.8 cm (1.8") and disengaged the shear brackets from the fixed blocks. The driver's knees impacted the left mid and lower instrument panel and the steering column cover. Although deformation to the plastic components resulted from the knee contacts, no lower extremity injuries were reported.

The driver was removed from the vehicle by rescue personnel and transported to a local hospital where she expired during emergency abdominal surgery of exsanguination. The medical report noted that the driver was administered 37 units of blood during the surgical procedure to repair the liver injuries.

The child occupants of the Geo Metro initiated forward trajectories and loaded the left front seat back and the right upper instrument panel. Both occupants were transported to a local hospital where they were treated for minor injuries and released.

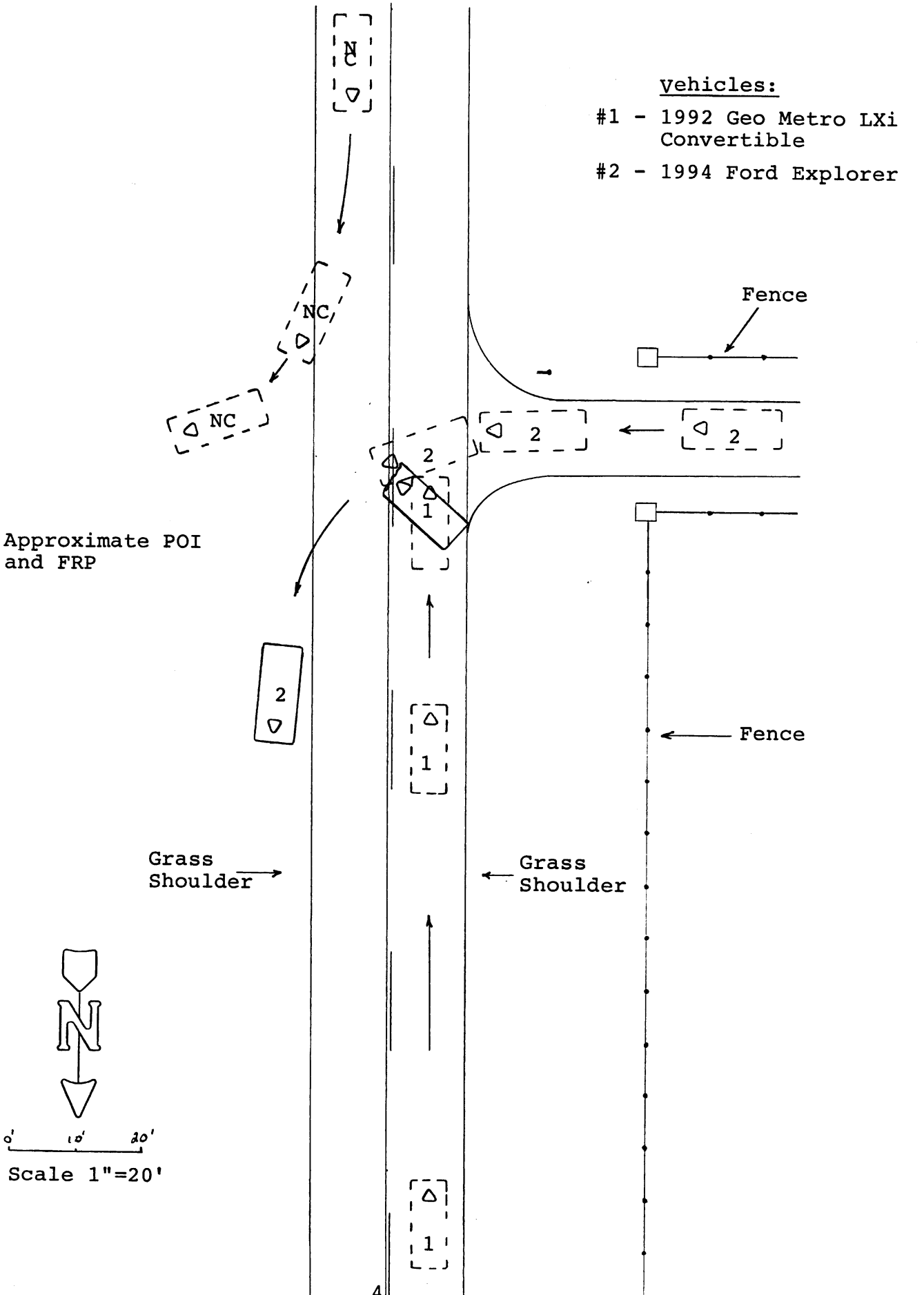
Notification of the crash and the subsequent inspection of the Geo Metro occurred approximately 2 months following the crash. At the time of our inspection, the lower anchorage for the left front seat belt system was found disassembled with the bolt and washer lying on the floor behind the driver's seat. The county coroner and the investigating officer observed the belt system in this condition during a post-crash inspection of the vehicle, which followed the death of the driver.

The anchor bolt was 30.0 mm (1.2") in length and 10.3 mm (13/32") in diameter. The head of the bolt was stamped with grade classification E2 75 and was backed with a 20.6 mm (13/16") outside diameter washer with a thickness of 4.8 mm (3/16"). The threads of the bolt were not damaged, however, the lower segment of the threads were covered with a whitish substance, probably a thread lubricant or lock compound. The bolt was threaded into a reinforced segment of the vertical aspect of the sill, forward of the base of the B-pillar. The edges of these threads were polished and flattened, however, the threads did not appear to be stripped from cross threading or over torquing of the bolt.

During this on-site investigation, this investigator attempted to re-thread the bolt into the sill. Although the bolt engaged the threads and turned into the sill, the threaded fitment would not securely hold the bolt into the sill. The bolt could be extracted from the sill with a side-to-side movement with a pull force parallel to the length of the bolt, thus indicating that the bolt was probably improperly sized for the threaded fitment.

CRASH SCHEMATIC

CALSPAN CASE NO. 94-41



CALSPAN ON-SITE SEAT BELT FAILURE INVESTIGATION
CALSPAN CASE NO. 94-41
VEHICLE: 1992 GEO METRO CONVERTIBLE
LOCATION: SOUTH CAROLINA

CRASH DATA

Location:	2-lane road
State:	South Carolina
Area/Type:	Rural/Agricultural
Crash Date/Time:	[redacted]1994/daylight hours
Investigating Police Agency:	Highway Patrol
Crash Type:	Car/ Sport utility vehicle, front-to-side impact configuration
Subject Vehicle Occupant Injury Severity:	Driver - Critical (AIS-5) Left Rear Passenger - Minor Center Rear Passenger - Minor

AMBIENCE

Viewing Conditions:	Daylight
Weather:	Overcast
Precipitation:	Rain
Road Surface:	Wet

HIGHWAY

Type:	State route
Number of Lanes:	2
Width:	7.1 m (23'2")
Surface:	Asphalt

HIGHWAY (CONT'D.)

Median:	None
Edge:	Grass shoulders
Vertical Alignment:	Level
Horizontal Alignment:	Straight
Estimated Coefficient of Friction:	.60
Traffic Density:	Light

TRAFFIC CONTROLS

Signals:	None
Signs:	None
Markings:	Solid/broken yellow centerline with passing permitted in the southbound travel direction, solid white road edge lines
Posted Speed Limit:	89 km/h (55 mph)

VEHICLES

	Subject Vehicle #1	Vehicle #2
Description:	1992 Geo Metro LSi, 2-door convertible	1994 Ford Explorer, 4-door sport utility vehicle
V.I.N.:	JG1MR3367PK (production number deleted)	1FMDU34X7RU (production number deleted)
Date of Manufacture:	7/92	Unknown, not inspected
Color:	Green	White
Odometer:	42,593 km (26,467 miles)	Unknown

VEHICLES (CONT'D.)

	Subject Vehicle #1	Vehicle #2
Engine:	L-4, 1.0 liter, 3 cylinder	V-6, 4.0 liter
Transmission:	5-speed manual, floor mounted transmission selector lever	4-speed automatic overdrive
Steering:	Power-assisted	Power-assisted
Brakes:	Power-assisted front disc/rear drum	Power-assisted
Padding:	Upper and mid instrument panel, knee bolster, glove box door, driver side air bag module cover flaps, sunvisors, door panels, door armrests, adjustable head restraints	
Manual Restraints:	3-point lap and shoulder belt systems in the front outboard seated positions with inertia activated locking retractors and continuous loop belt webbings	
Automatic Restraints:	Supplemental driver's side air bag system which deployed as a result of the crash	
Tow Status:	Towed due to vehicle damage	Towed due to vehicle damage

VEHICLE DAMAGE

Subject Vehicle #1

Exterior:

The 1992 Geo Metro sustained moderately severe frontal damage as a result of its front-to-side impact sequence with the Ford Explorer (vehicle #2). The damaged area involved the entire frontal width of the vehicle which included the bumper assembly, grille, hood, both front fenders, and the substructure of the Geo. The impact separated the bumper fascia and the styro-foam filler panel from the bumper reinforcement bar (refer to Photograph Nos. 9 and 10). The direct contact damage was 135.9 cm (53.5") which extended across the full frontal width of the separated fascia. Maximum frontal crush was 43.5 cm (17.1") located 34.3 cm (13.5") inboard of the left front corner of the bumper reinforcement bar (refer to Photograph Nos. 11 through 14). A crush profile was documented at the bumper reinforcement bar which resulted in a measurement damage length (Field L) of 126.7 cm (49.9"). The crush profile was as follows: C_1= 42.2 cm (16.6"), C_2=42.9 cm (16.9"), C_3=33.7 cm (13.25"), C_4=27.0 cm (10.6"), C_5=23.8 cm (9.4"), C_6=26.0 cm (10.25"). These values represent the actual residual crush profile with the free space (bumper contour and filler depth) deducted from the field measurements.

The displacement of the frontal structure resulted in reductions of 7.6 cm (3.0") and 0.5 cm (0.2") of the left and right wheelbases respectively. The windshield was cracked by exterior deformation, however, the side glazing remained intact. Both doors remained closed during the crash and were fully operational post-crash.

CDC:

01-FDEW-3

Repair Cost:

Total loss

Interior:

Although the exterior deformation was rated as moderately severe for the sub-compact vehicle, there was no interior intrusion or damage associated with the exterior deformation. The windshield was cracked as a result of the exterior deformation and subsequent impact from the driver's left hand and wrist (refer to Photograph No. 29). Two distinct contact points were noted to the windshield. The driver's left hand contacted and cracked the laminated windshield 30.5 cm (12.0") left of center and 22.2 cm (8.75") below the header while her wrist cracked the glazing 38.1 cm (15.0") left of center and 20.3 cm (8.0") below the header. These contact points resulted from hand displacement from the steering wheel rim as the air bag expanded against her anterior forearms.

VEHICLE DAMAGE (CONT'D.)

Subject Vehicle #1

Interior (Cont'd.)

The driver's abdominal and thoracic regions loaded the manual 3-point lap and shoulder belt system and the deploying air bag as she initiated a forward trajectory in response to the frontal impact force. The lap belt anchorage bolt subsequently separated from the sill which allowed the driver to continue forward. Her abdominal area submarined the air bag and loaded the lower steering wheel rim. Her thoracic loading force was transmitted through the air bag and into the steering assembly which, in combination with her abdominal loading of the wheel rim, compressed the absorbing column. The shear capsules were displaced 4.8 cm (1.9") forward and both brackets were fully disengaged from the blocks. There was no deformation of the steering wheel rim or spokes. It should be noted that the steering wheel rim was supported by four spokes at the 3 and 9 o'clock and 5 and 7 o'clock positions.

The driver's left knee impacted the mid and lower instrument panel 48.3-61.0 cm (19.0-24.0") left of center and 22.9-38.1 cm (9.0-15.0") below the upper instrument panel. The contact fractured the plastic mid panel and displaced the speaker cover and hood release mechanism approximately 7.6 cm (3.0") forward (refer to Photograph No. 27). The driver's right knee contacted the knee bolster at the base of the steering column (refer to Photograph No. 28). This contact deformed the plastic component and cracked the leading edge of the bolster. In addition, blue denim fabric transfers were present in the in the area of contact which was located 28.0-40.6 cm (11.0-16.0") left of center and 35.6-38.1 cm (14.0-15.0") below the top of the instrument panel.

The driver's face contacted the deployed driver's side air bag. Facial contact was evidenced by make-up and lipstick transfers on the bag. A fleshtone make-up transfer was located on the air bag tether reinforcement at 0-6.4 cm (0-2.5") below the horizontal centerline and 1.3 cm (0.5") left to 5.7 cm (2.25") right of the vertical centerline. A faint pink-colored lipstick transfer was noted to the bag at the right upper quadrant, located 10.2-14.0 cm (4.0-5.5") above the horizontal centerline and 9.5-10.2 cm (3.75-4.0") right of the vertical centerline (refer to Photograph Nos. 23 and 24).

VEHICLE DAMAGE (CONT'D.)

Subject Vehicle #1

Interior (Cont'd.)

The left side of the interior rear view mirror was displaced forward from probable driver right hand/arm contact, however, the mirror was not damaged.

The lap belt anchorage bolt of the driver's side manual belt system separated from the threaded sill attachment point as a result of occupant loading during the crash. This issue is addressed in the Manual Restraint section of this report.

The child occupants positioned in the cargo area of the vehicle, rearward of the front bucket seats, initiated a forward trajectory and loaded the left front seat back, deforming the seat back frame in a counterclockwise direction (refer to Photograph No. 30). One of the child occupants continued forward between the front seat back supports and impacted the padded right upper instrument panel, deforming the panel 22.9-31.8 cm (9.0-12.5") right of the center and 0-10.2 cm (0-4.0") below the top surface of the instrument panel (refer to Photograph No. 44). A scuff mark was noted to the glove box door 3.8-7.0 cm (1.5-2.75") right of the door center and 13.3-16.5 cm (5.25-6.5") below the top of the door. At the time of vehicle inspection, the glove box door was found on the right front floor completely separated from the vehicle as documented in Photograph No. 43.

Vehicle #2

Exterior:

The Ford Explorer was not available during the on-site investigation which was initiated approximately 2 months following the crash. The left side damage profile was viewed from on-scene police photographs and was rated as moderate. The direct contact damage was centered between the A-and C-pillars of the vehicle with the combined induced and direct damage extending from the leading edge of the left front fender to the left C-pillar. A crush profile was estimated from the photographs for the SMASH program and was as follows: C_1=2.5 cm (1.0"), C_2=7.6 cm (3.0"), C_3=15.2 cm (6.0"), C_4=20.3 cm (8.0"), C_5=5.1 cm (2.0"), C_6=0.

CDC: 10-LPEW-3

Repair Cost: Unknown

AUTOMATIC RESTRAINT SYSTEM

The 1992 Geo Metro convertible was equipped with a Supplemental Restraint System (SRS) that consisted of a driver side air bag which deployed as a result of the crash with the Ford Explorer. The driver side air bag deployed as designed from an H-configuration air bag module cover assembly that was contained within the four-spoke steering wheel. The spokes were positioned at the 3 and 9 o'clock and 5 and 7 o'clock sectors. The H-configuration flaps were hinged at the top and bottom with a center (horizontal) tear seam and vertical perimeter seams. The cover flaps were symmetrical and measured 20.8 cm (8.2") in width and 7.6 cm (3.0") vertically. The horn buttons were isolated from the air bag module and were located on the upper steering wheel spokes at the 3 and 9 o'clock positions.

The deployed air bag was constructed of a typical woven nylon-type fabric, sewn with an internal peripheral seam. The diameter of the air bag in its deflated state was 64.8 cm (25.5"). The bag was vented by two 3.2 cm (1.25") diameter ports located on the back side of the bag at the 3 and 9 o'clock positions. The bag was tethered internally with a 17.1 cm (6.75") diameter tether reinforcement sewn to the face of the bag with 3 rows of stitching. A label located on top of the bag adjacent to the inflator identified the bag as follows:

Top Bar Code

[redacted]

Bottom Bar Code

[redacted]

The driver's face contacted the deployed air bag as she initiated a forward trajectory in response to the frontal impact. Bag contact was evidenced by make-up and lipstick transfers located within the center area of the bag at the tether reinforcement (refer to Photograph Nos. 23 and 24.

MANUAL RESTRAINTS

The Geo Metro was equipped with manual 3-point lap and shoulder belts in the two front seated positions. The belt systems consisted of a continuous loop lap and shoulder belt webbing with a sliding latchplate. Due to the convertible design of the vehicle, the belt systems retracted into the top of the lower B-pillar at the beltline with inertia activated retractors mounted into the base of the pillars. The total length of the belt webbings were 240.0 cm (94.5") measured from the top of the lower B-pillar to the floor anchorage with the belt fully extended from the retractor. The webbing width was 4.8 cm (1.9"). The belt latchplate was abraded from routine usage. These abrasion patterns were consistent with frequent belt usage for the recorded mileage on the odometer. The left front latchplate was identified by [redacted] stamped into the steel.

MANUAL RESTRAINTS (CONT'D.)

At the time of our inspection, the lower anchorage for the left front belt system was disassembled with the bolt and washer lying on the rear floor area of the vehicle. The coroner noted that she found the components in this disassembled state when she and the investigating police officer inspected the vehicle following the death of the driver.

The lower end of the left front belt system was anchored with a 30.4 mm (1.2") long, 10.3 mm (13/32") diameter bolt threaded into the sill of the vehicle. The actual threaded length of the hex head bolt was 22.2 mm (7/8"). The lower 11.1 mm (7/16") of the bolt threads were covered with a whitish substance which was possibly a lubricant or a thread lock compound. The head of the bolt was stamped with the characters E2 and 75. The flat washer, shown in Photograph Nos. 39 and 40, was positioned between the flared head of the bolt and the anchorage plate for the webbing. The washer was 4.8 mm (3/16") thick with an inside diameter of 11.1 mm (7/16") and an outside diameter of 20.6 mm (13/16"). The anchorage plate on the lower end of the belt webbing (refer to Photograph Nos. 38 and 39) was 3.8 cm (1.5") wide and 3.5 cm (1.375") long. This plate was stamped with the character P and the number 2502.

The belt system anchor bolt was threaded into the vertical surface of the sill between the B-pillar and the rear seat track anchorage (refer to Photograph No. 33). The steel sill was reinforced at the location of the bored hole and threaded for the bolt. The edges of the threads in the sill were polished and flattened. It should be noted that the threads within the sill did not appear to be stripped from possible cross threading or over torquing of the bolt.

During the on-site investigation, this investigator attempted to re-thread the bolt into the sill. Although the bolt engaged the threads and turned into the sill, the threaded fitment would not securely hold the bolt into the sill. The bolt could be extracted from the sill without rotating the bolt in a counterclockwise direction. A slight side-to-side movement with a pull force parallel to the length of the bolt would separate the bolt from the sill, indicating the bolt was improperly sized for the threaded fitment.

In the event that the threads were damaged during the assembly process of the vehicle, or that an improper sized bolt or tap was used to thread the hole, normal movement of the belt system through routine usage and access to the cargo area could have backed the bolt out toward the end of the threads, thus separating under occupant loading during the crash. The threaded ends of the bolt and bore did not exhibit a flattening to the end of the threads that would occur from a force applied perpendicular to the bolt length prior to separation (refer to Photograph Nos. 33-40).

The lower segment of the left front belt webbing was concealed in a vinyl jacket. The jacket extended over the anchorage bolt and was 30.2 cm (11.9") in length. A label was affixed to the inside surface of the webbing directly above the vinyl jacket which contained the following information:

MANUAL RESTRAINTS (CONT'D.)

This Seat Belt Assembly Is For Use Only In Front Left In Geo Metro Convertible.

Seat Belt for Automobiles Meets: FMVSS No. 209,302
Model: TK-523-P181
Mfg. Date: 1992
Lot No. BG01D
[redacted]

VEHICLE HISTORY

The documented history of the 1992 Geo Metro convertible was tracked through the local Chevrolet dealership which initially sold the vehicle. The 1992 Geo Metro convertible was initially purchased as a new vehicle by the original owner on [redacted], 1993. At the time of sale, the vehicle's odometer had recorded a total of 109 km (68 miles). The original owner (female) had returned the vehicle to the dealership on three separate occasions for routine service/warranty repairs. These were documented by the service records that were retrieved from the dealership during our on-site investigation of the crash and are included as Attachment C of this report. The date of service, repair orders, and vehicle mileage were as follows:

1. Date of Service -[redacted]/93. Owner complained of static in the left front speaker and cut-out of speaker when vehicle hits bump. Mileage 3,440 (5,536 km)

2. Date of Service -[redacted]/93. Vehicle was returned to the dealership for replacement of the left side speaker. In addition, the owner complained that the turn signal assembly occasionally fails to turn off following the completion of a turn. Mileage 4,152 (6,689 km).

3. Date of Service -[redacted]/94. Owner returned vehicle to dealership with complaints of hood bolt alignments and engine and/or valve rattle on acceleration, or when cold. Mileage 18,075 (29,088 km).

The original owner traded the 1992 Geo Metro convertible back to the dealership upon the purchase of a new vehicle. The dealership placed the vehicle on its used car lot and resold the Geo Metro to the current owner (owner at time of crash) on [redacted]/94. The vehicle had a recorded odometer reading of 34,550 km (21,469 miles) on the date of this resale. The resale price of the Geo was listed on the dealership's records at $8695, less $1795 for his trade-in of a 1990 Diahatsu Charade. There was no recorded service of the vehicle at the dealership following the [redacted], 1994 resale transaction. The odometer reading of the vehicle at the time of the crash was 42,593 km (26,467 miles).

COLLISION SEQUENCE

Pre-Crash:

On the day of the crash, the Geo Metro was operated by the female friend of the owner. She was returning to her residence with her 6 and 4 year old sons. The investigating officer noted that both children were reportedly positioned in the cargo area behind the front seats. It was raining at the time of the crash which occurred during daylight hours on a rural two-lane road. The posted speed limit was 89 km/h (55 mph).

The Geo Metro was traveling in a southerly direction at a unknown, but reasonable rate of speed on the straight and level segment of road with the headlights on. The investigating police officer estimated the pre-crash speed of the Geo at 89 km/h (55 mph). As she approached a private driveway, which entered from her right, a 1994 Ford Explorer initiated a left turn from the driveway directly across the Geo's path of travel. Although unconfirmed by physical evidence (i.e., skid marks), the driver of the Geo Metro probably braked in an attempt to avoid the crash. A third vehicle, a 1981 Dodge van, was traveling in a northerly direction on an approach to the impending crash site at a driver estimated speed of 80 km/h (50 mph). The presence of this vehicle would have prevented the driver of the Geo from initiating a counterclockwise steering input into the opposing lane as a further attempt to avoid the Ford Explorer. The driver of the Ford Explorer probably accelerated in an attempt to "beat" the Geo across the southbound lane.

Crash:

The full frontal area of the Geo Metro impacted the left passenger area of the Ford Explorer. Resultant directions of force were within the 1 o'clock sector for the Geo Metro and 10 o'clock for the struck Ford Explorer. The damage algorithm of the SMASH program computed velocity changes of 35 km/h (22 mph) for the Geo and 16 km/h (10 mph) for the Ford Explorer. As a result of the crash induced deceleration, the Geo's supplemental driver's side air bag system deployed.

The driver of the third vehicle, the 1981 Dodge van that was traveling northbound, swerved to the right and braked to avoid the crash that occurred in the southbound travel lane. The Dodge traveled off the highway to avoid the accident and came to rest on the grassy area adjacent to the northbound travel lane, facing in an easterly direction. There was no contact between the Dodge van and the vehicles involved in the crash .

Post-Crash:

Final Rest -

The Geo Metro rotated approximately 45 degrees in a counterclockwise (CCW) direction as a result of the forward motion of the Ford Explorer. The investigating officer noted on his report that the Geo Metro came to rest near the point of impact. At rest, the vehicle was diagonal to the southbound travel lane, facing in a southeasterly direction.

COLLISION SEQUENCE (CONT'D.)

Post-Crash (Cont'd.)

Final Rest (Cont'd.) -

The Ford Explorer continued across the northbound travel lane before coming to a controlled stop on the shoulder adjacent to the northbound travel lane. At rest, the Ford Explorer was facing in a northerly direction and was positioned approximately 12 m (40') north of the point of impact.

Driver Activities -

The driver of the Geo Metro rebounded into the left front seat back and slumped to her right and bled onto the right front seat cushion. She was removed from the vehicle by rescue personnel and transported to a local hospital for treatment.

Police Activities -

The investigating police officer was notified of the crash via his police radio and responded to the scene, arriving approximately 8 minutes following the call. At the scene, he initiated his investigation and assisted with traffic control and requested tow assistance.

Rescue Activities -

Rescue personnel were called approximately 4 minutes after the crash and arrived on-scene within 10 minutes of the call. Rescue personnel immobilized the neck and spine of the female driver of the Geo who was initially conscious and combative at the crash site. The driver and her two children were transported by ambulance to a local hospital for treatment.

Scene Clearance -

The Geo Metro sustained disabling damage which required towing from the scene. The Ford Explorer sustained moderate left side damage and was towed from the scene. Vehicle #3 was not involved in the crash and was driven from the scene to the driver's destination.

HUMAN FACTORS/OCCUPANT DATA

Air Bag Vehicle

Driver:	31 year old female
Height:	152.4-154.9 cm (60-61")
Weight:	48.1-52.2 kg (106-115 lb.)
Manual Restraint Usage:	3-point lap and shoulder belt system
Usage Source:	Vehicle inspection, police accident report
Eyeware:	Unknown
Vehicle Familiarity:	Unknown, but not more than 3 months
Route Familiarity:	Very familiar, resident of area
Trip Plan:	Returning to residence
Mode of Transport From Scene:	Ambulance
Type of Medical Treatment:	Transported to local hospital where she expired during surgery approximately 3 hours following the crash

DRIVER INJURIES

Injury	Injury Severity (AIS 90)	Injury Mechanism
Avulsion of the upper third of the liver with massive multiple stellate lacerations	Critical (541828.51)	Lower steering wheel rim
Ruptured spleen	Severe (544226.42)	Lower steering wheel rim
Several small abrasions of the chin	Minor (290202.18)	Deploying driver's side air bag
Hematoma of the left face, below ear	Minor (290402.12)	Deploying driver's side air bag
Horizontally oriented hematoma with abrasion over left breast	Minor (490402.12)	Nameplate on blouse/seat belt
Small laceration of the dorsal aspect of the left middle finger	Minor (790602.11)	Windshield
Multiple contusions of the knuckles of the left hand	Minor (790402.12)	Windshield

DRIVER INJURIES (CONT'D.)

Injury	Injury Severity (AIS 90)	Injury Mechanism
Abrasion on the dorsal aspect of left wrist	Minor (790202.12)	Windshield
Abrasion with contusion on the distal anterior right forearm	Minor (790202.11, 790402.11)	Deploying driver's side air bag
Abdominal abrasions	Minor (590202.19)	Lower steering wheel rim

DRIVER KINEMATICS

The driver of the 1992 Geo Metro was presumably in a normal posture at impact with both hands positioned on the steering wheel rim. At the time of our inspection, the driver's seat track was adjusted to the full rearward position, however, the position of the seat track at the time if the crash was unknown. She was properly restrained by the manual 3-point lap and shoulder belt system.

At impact with the Ford Explorer, the supplemental driver's side air bag system deployed. The driver initiated a forward trajectory into the path of the deploying air bag. The anterior aspect of her forearms were contacted by the expanding air bag which displaced the left hand from the steering wheel rim. The dorsal aspect of her left hand and wrist impacted and cracked the windshield which resulted in a small laceration of the dorsal aspect of the left middle finger, multiple contusions of the knuckles of the left hand, and an abrasion over the dorsal aspect of the left wrist. The hand and wrist contacts were located 30.5 cm (12.0") and 38.1 cm (15.0") left of the vehicle's centerline respectively. The expanding air bag contacted the distal anterior aspect of her right forearm which resulted in an abrasion with contusion of the forearm.

The driver's torso and abdominal area loaded the manual belt webbing. The webbing probably compressed the nameplate against her chest that was affixed to her blouse. The plate produced a horizontally oriented hematoma with and abrasion over the left breast. Her loading of the manual belt system resulted in separation of the lower anchorage from the sill mount. This separation allowed the driver to move further forward in response to the frontal impact force and partially submarine the steering assembly and the deployed air bag. Her right knee contacted the lower steering column cover which cracked the leading edge of the plastic component. Her left knee impacted and compressed the left mid and lower instrument panel at the speaker cover and hood release lever. The contact fractured the components and crushed the speaker cover to a depth of approximately 7.6 cm (3.0"). No injuries were noted from the knee contacts. Her abdominal area loaded the edge of the lower steering wheel rim which resulted in abrasions across the abdominal wall, an avulsion of the

DRIVER KINEMATICS (CONT'D.)

upper third of the liver with massive multiple stellate lacerations, and a ruptured spleen. There was no deformation of the steering wheel rim. It should be noted, however, that the lower steering wheel rim was rigid due to the four spoke design with the lower spokes positioned at the 5 and 7 o'clock sectors. The energy absorbing steering column was compressed from driver loading. This was evidenced by 4.8 cm (1.9") of shear capsule separation which resulted in complete disengagement of both column brackets from the blocks.

The driver's face contacted the expanding air bag as she initiated her forward trajectory. Makeup and lipstick transfers were noted to the face of the bag within the center tether reinforcement and at the upper right quadrant of the bag. As a result of facial with the air bag, the driver sustained several small abrasions of the anterior chin and a hematoma of the left face below the ear.

DRIVER MEDICAL TREATMENT

The driver came to rest in the left front seat with her head slumped to the right over the right front seat cushion. She remained conscious in the vehicle and waited for emergency personnel to arrive on scene. The driver was removed from the vehicle and was transported by ambulance to a local hospital where she was evaluated and prepared for emergency surgery (exploratory laparotomy). The surgeon noted in his report that as the abdomen was opened, pints of blood poured out of the cavity. This was attributed to the massively lacerated and avulsed liver and the rupture of the spleen. During the surgeon's attempts to repair the liver, the driver was administered 37 units of blood. The driver experienced two episodes of hypotension and cardiac arrest and expired due to exsanguination from the liver injuries.

REAR POSITIONED PASSENGERS

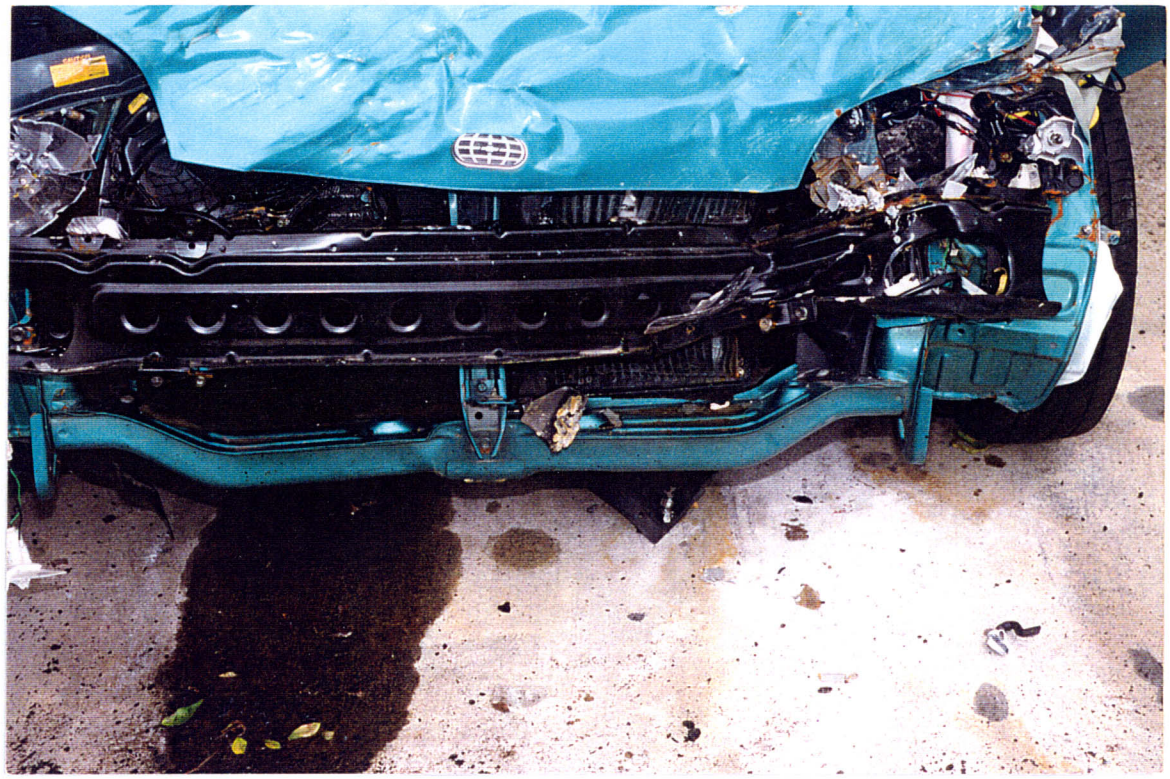
Age/Sex:	4 and 6 yr old males
Vehicle Position:	Positioned in cargo area behind front bucket seats
Height:	Unknown
Weight:	Unknown
Manual Restraint Usage:	None available, not designated seated positions
Mode of Transport From Scene:	Ambulance
Type of Medical Treatment:	Transported to a local hospital and discharged.

PASSENGER KINEMATICS

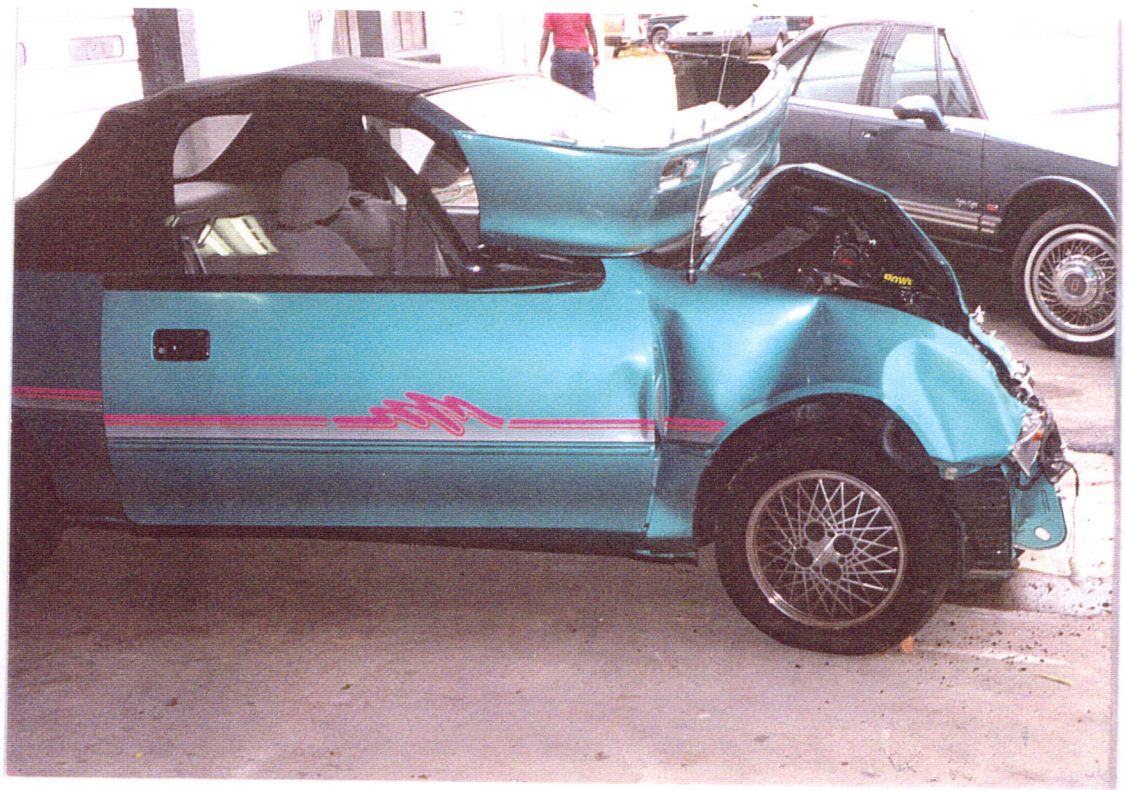
The child passengers of the 1992 Geo Metro were positioned in the rear storage area behind the front bucket seats. The vehicle had two designated seated positions (LF, RF) therefore no restraint systems were available for the child passengers. The child positioned behind the driver's seat initiated a forward trajectory in response to the frontal impact force and loaded the seat back support. His loading force deformed the seat back forward and rotated it in a counterclockwise direction. The other child was probably positioned in the center area between the front bucket seat backs. He moved forward between the seat backs and impacted the right upper instrument panel. His contact with the upper panel deformed the padded panel. In addition, the glove box door was separated from the lower right instrument panel. A scuff mark was noted to the lower aspect of the glove box door from possible passenger contact. Both child occupant's reportedly sustained minor severity injuries and were treated at a local hospital and released.

ATTACHMENT A:

Coroner's Photographs



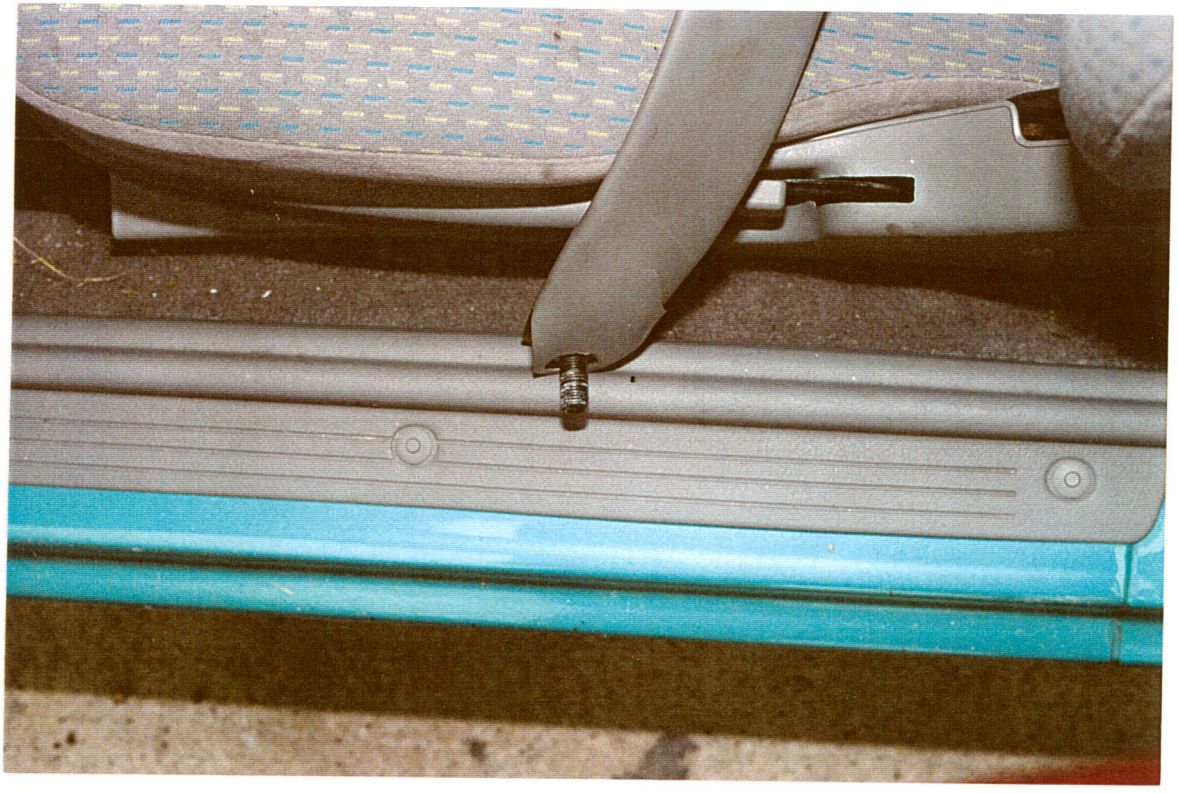
1. Close-up view of the frontal damage to the Geo Metro.



2. Right profile view documenting the extent of frontal damage.

3. Overall interior view of the deployed air bag, deformed seat back, and the separated lower belt anchorage.

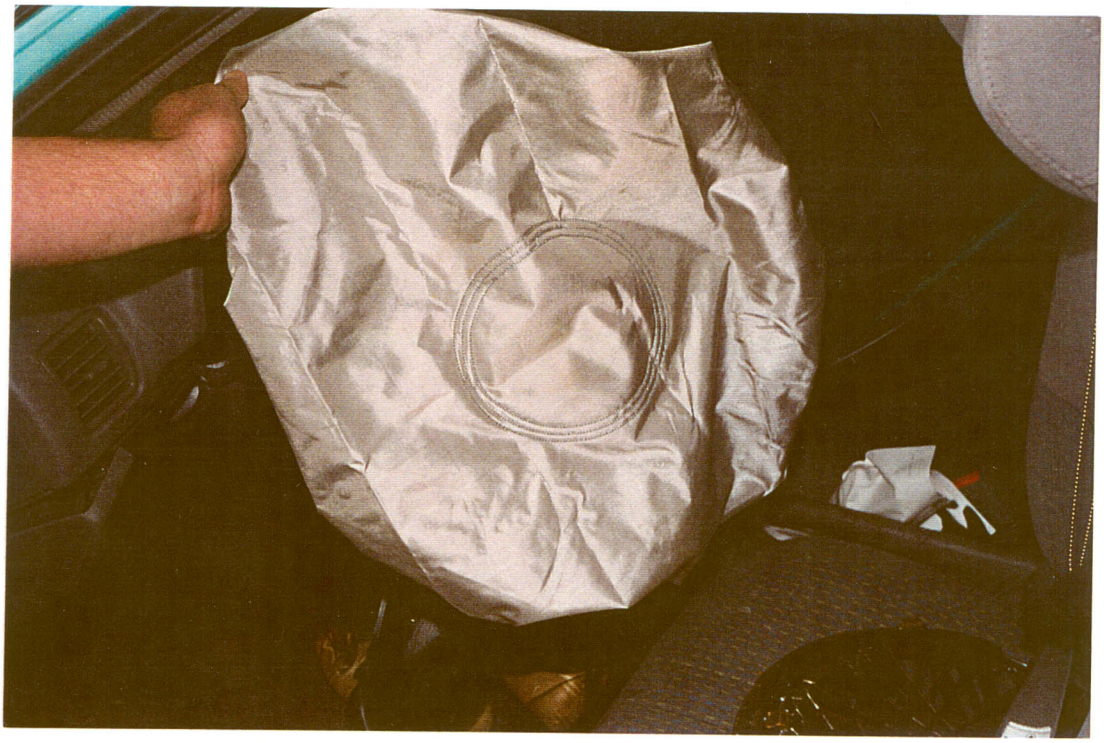
4. Close-up view of the lower anchorage and bolt assembly.



5. Additional view of the separated lower anchorage assembly.

6. Left front belt webbing extended from the B-pillar at the beltline.

7. Center mounted buckle/latchplate configuration.



8. Make-up transfers on the deployed driver's side air bag.

"GRAPHIC"
PHOTOGRAPHS and IMAGES

Several vivid photographs have been removed for this case. These photographs contain highly graphic material which may be improper for the general audience.

Photo #9-11 pages A6,A7

If you would like a copy of these photographs and/or images please call or write to:

Marjorie Saccoccio at (617) 494-2640
VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER
55 Broadway
Cambridge, MA 02142

ATTACHMENT B:

Color Prints

1. Southbound view of the Geo Metro's initial approach to the crash scene.

2. Geo Metro's approach view at 46 meters (150 feet) from the point of impact.

3. Geo Metro's approach view at 30 meters (100 feet) from the point of impact.

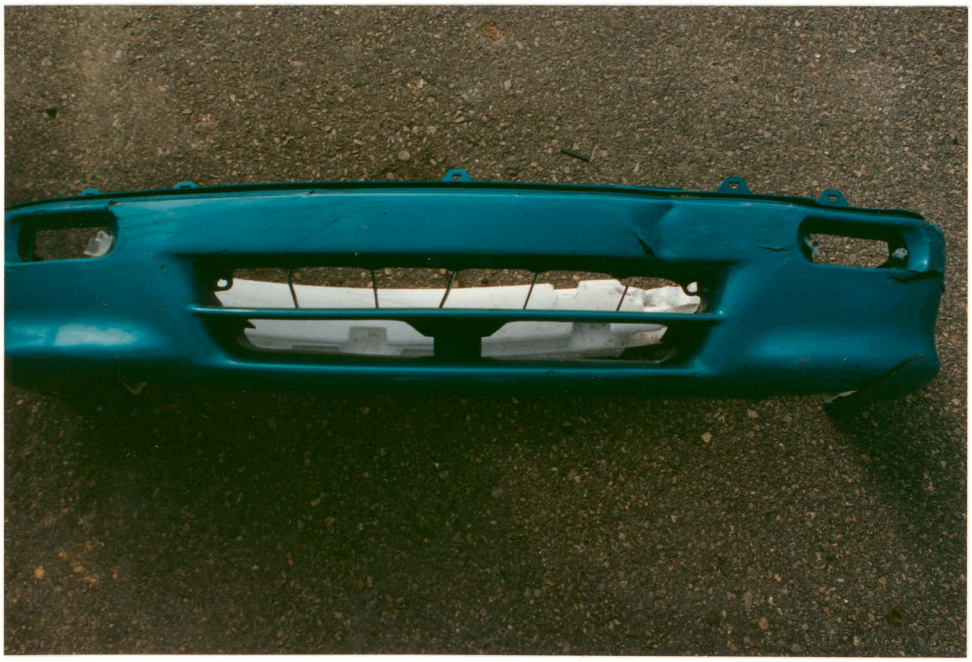
4. Geo's approach view at 15 meters (50 feet) from the point of impact.

5. Southbound view of impact area.

6. Eastbound view from private driveway of crash scene.

7. Northbound view of the crash scene.

8. Frontal damage to the Geo Metro.



9. Frontal view of the direct contact damage to the bumper fascia (separated).

10. Overhead view of the bumper fascia.

11. Overhead view of the frontal crush profile.

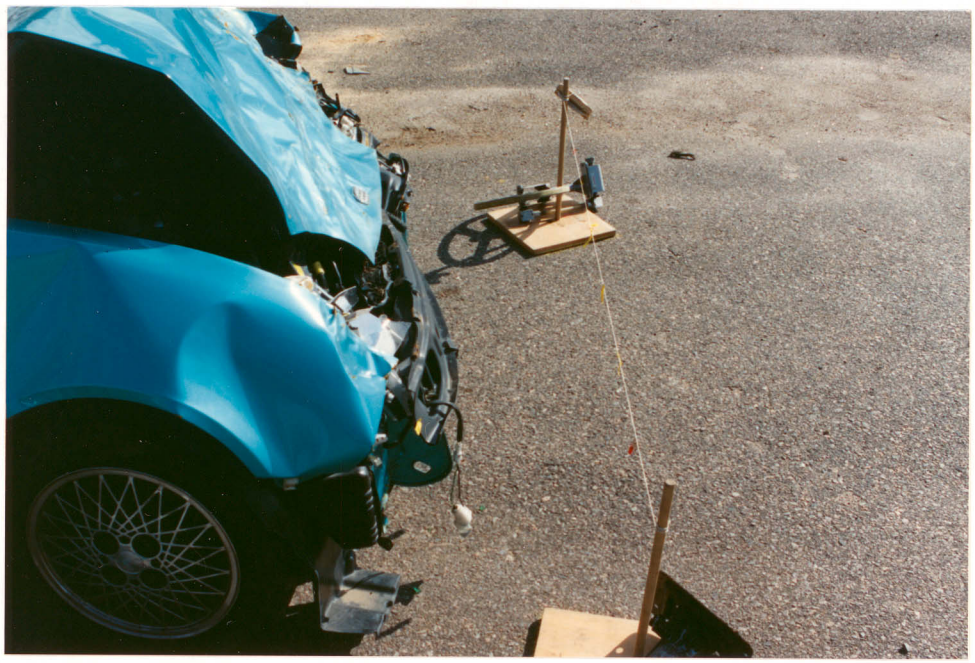
12. Left front three-quarter view of the Geo Metro.

13. Perpendicular view of the crush profile.

14. Left side view of the Geo Metro.

15. Left rear view of the Geo Metro.

16. Right side view.



17. Perpendicular view of the frontal crush from the right front corner.

18. Right front three-quarter view.

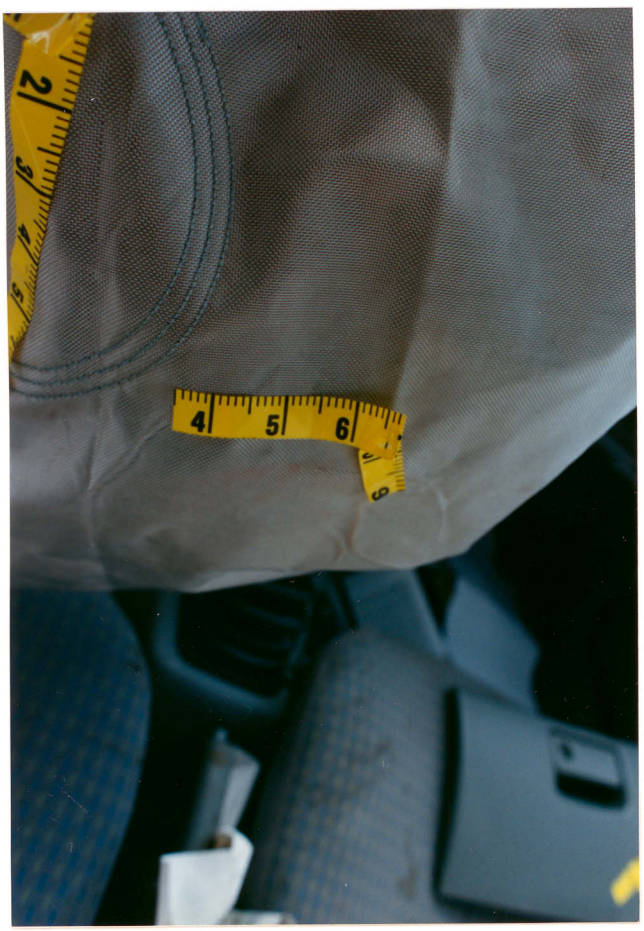
19. Vehicle identification label on the left door.

20. Overall view of the driver's compartment and the deployed driver's side air bag.

21. Driver's seat and the manual 3-point belt system.

22. Driver's side air bag.

23. Close-up view of the driver's side air bag.

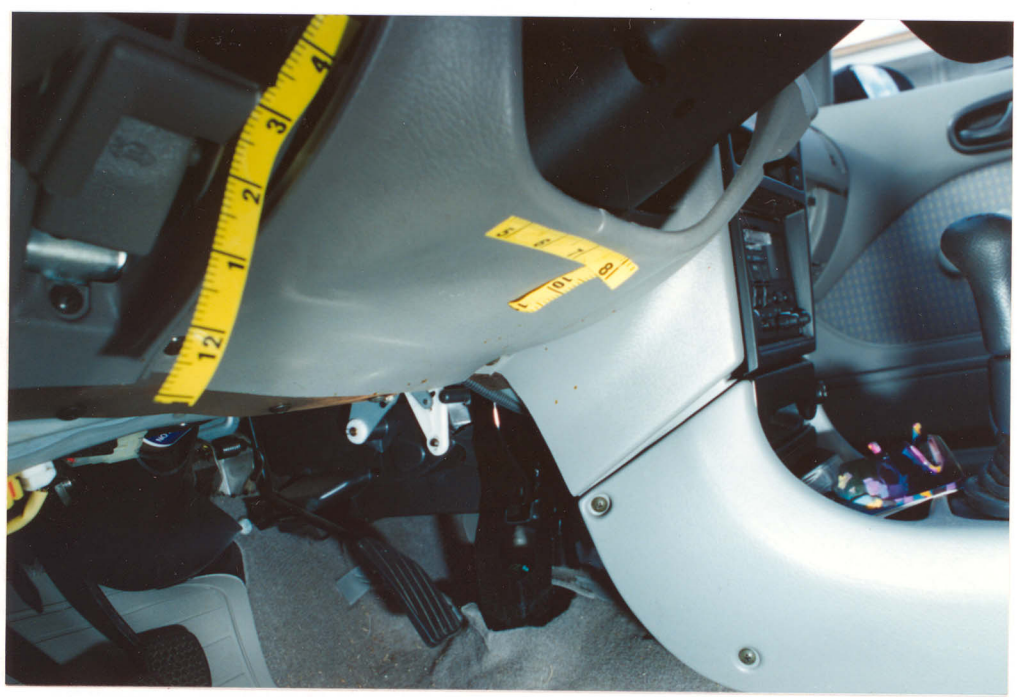


24. Lipstick transfer mark on right upper quadrant of air bag.

25. Perpendicular view of the steering wheel and deployed air bag.

26. Left knee impact to the left mid instrument panel.

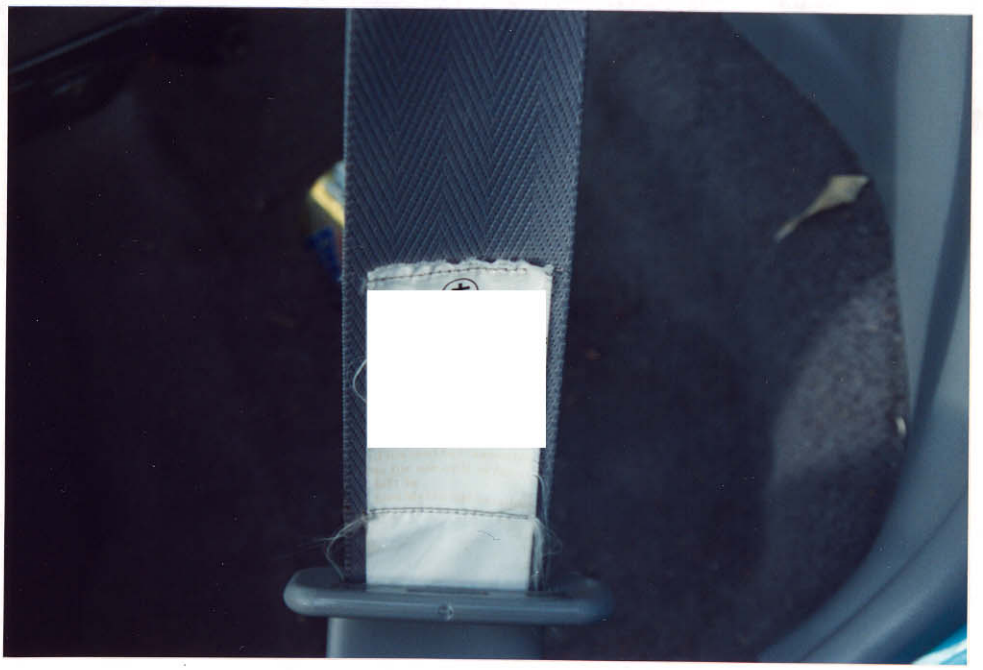
27. Close up view of the driver side instrument panel and steering wheel column cover.



28. Right knee contact to the base of the steering column cover.

29. Interior view of the driver's side windshield damage.

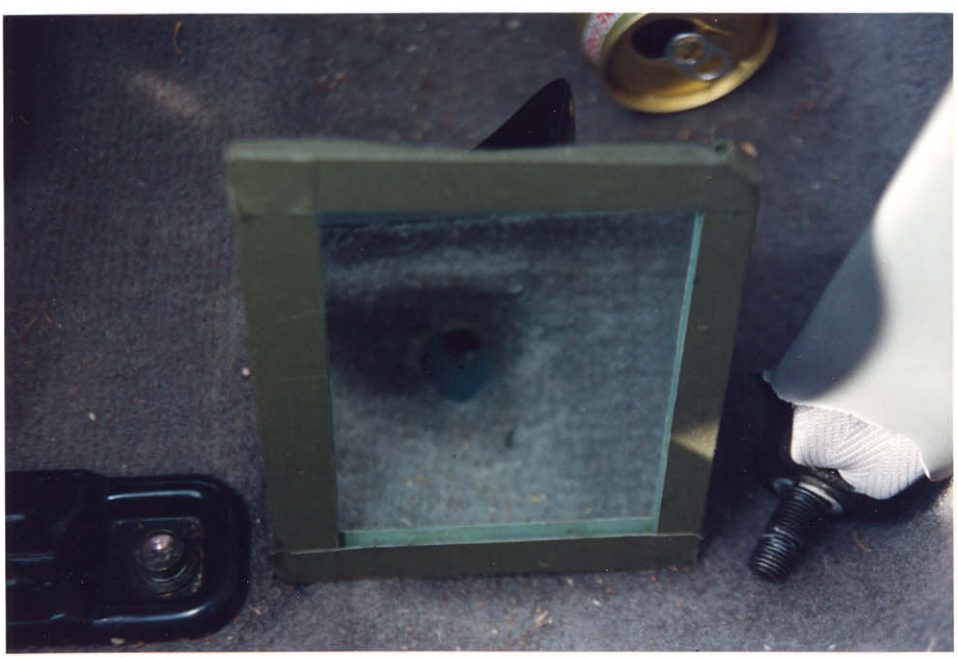
30. Right side view of the rear storage area behind the front seats and the deformation to the back of the left front seat back.



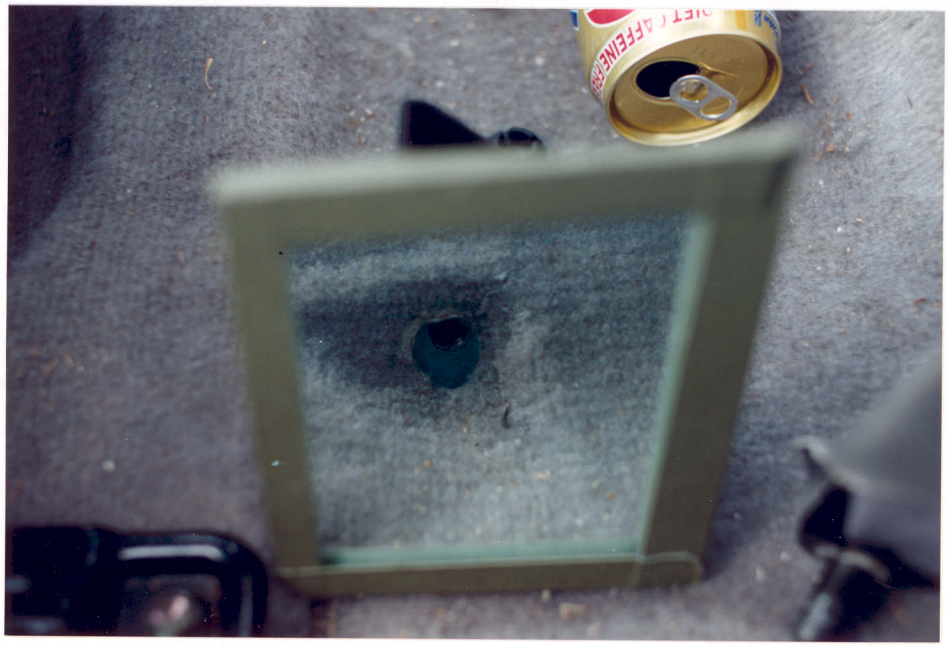
31. Driver's side manual 3-point seat belt identification label.

32. View from left side of the driver side lap belt separated from lower anchor point at sill.

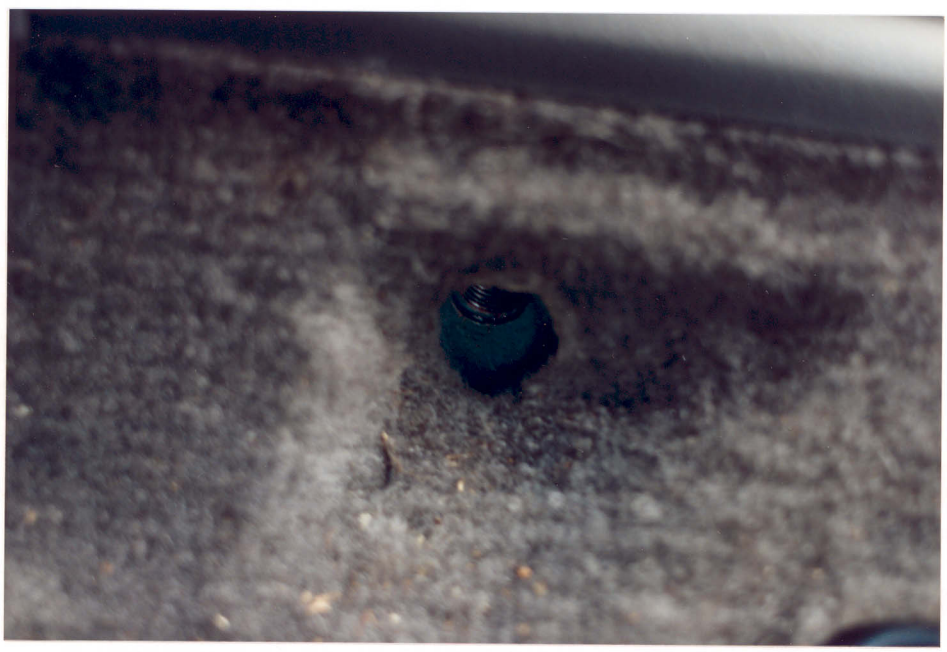
33. View from inside of driver seat belt separated from sill.



34. Seat belt with anchor bolt (mirror view) and the floor anchorage hole.

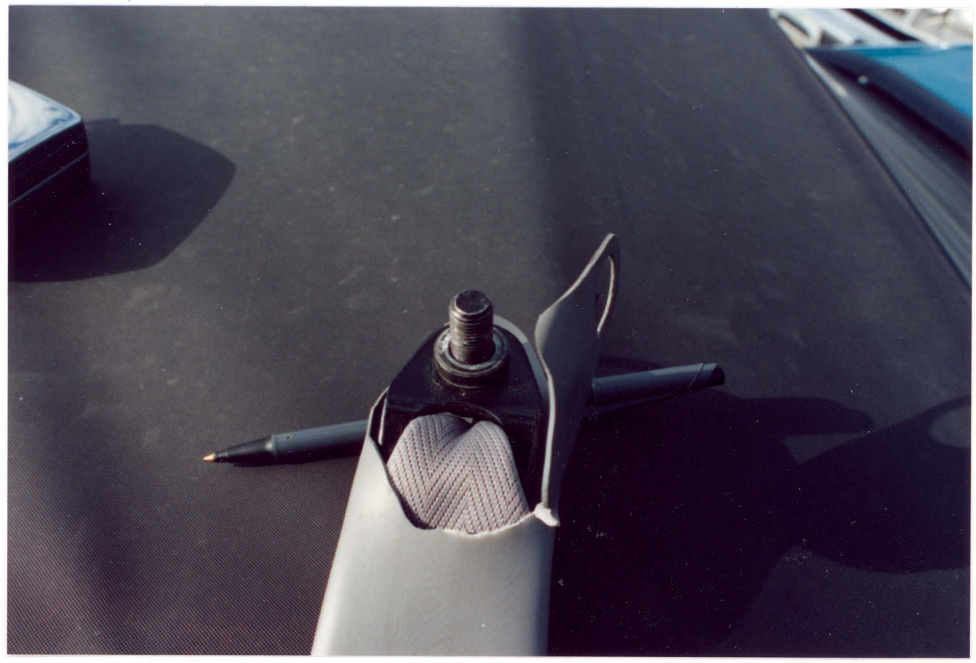


35. View of the floor anchorage hole.



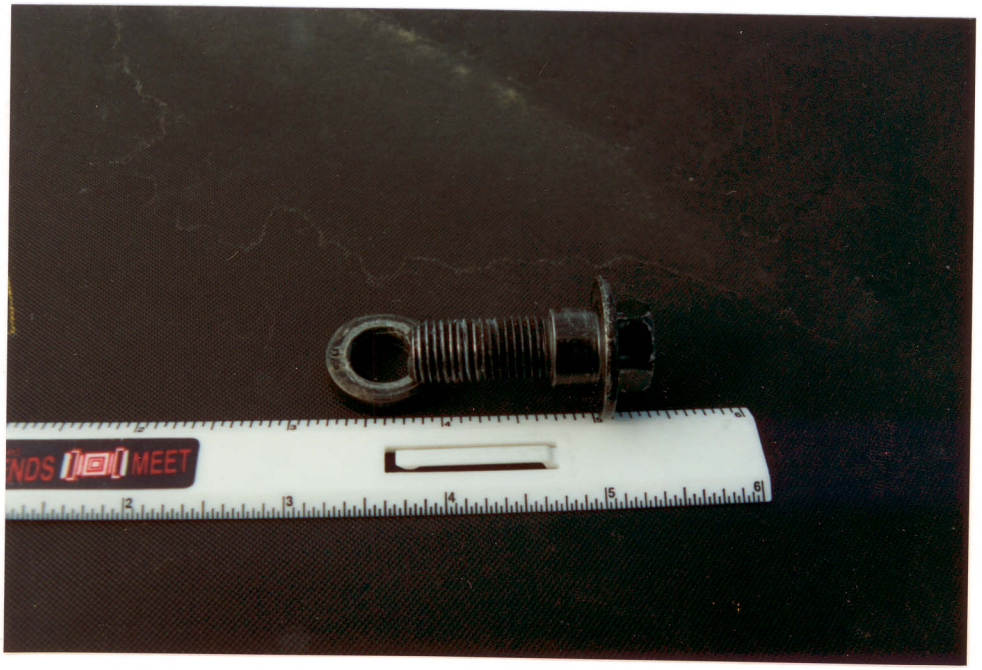
36. Close up view of the stripped threads in the floor anchorage hole.

37. Back side view of seat belt anchor bolt in plastic jacket.



38. Close up view of damage to anchor bolt plastic jacket.

39. Perpendicular view of lower seat belt and anchor bolt assembly.



40. Hex head anchor bolt with washer.

41. Close-up view of the lap belt anchor bolt.

42. Passenger side seat belt anchored into floor.

43. Perpendicular view across the interior of passenger side.

44. Child passenger contact to the right upper instrument panel.

45. View of the separated glove box door.

46. Probable child passenger knee scuff on the glove box door.

47. Passenger side manual 3-point belt system.

ATTACHMENT C:

SMASH Output

Summary of Results Using Damage

94-41

	Speed Change (Damage)
Vehicle #1	
Total	35 km/h (22 mph)
Longitudinal	-33 km/h (-20 mph)
Latitudinal	-12 km/h (-7 mph)
PDOF Angle	20
Energy Dissipated	= 62797 Joules (46311 Ft-Lb)
Barrier Equivalent Speed	= 36.6 km/h (22.7 mph)
Calculated using size and stiffness categories.	
Vehicle #2	
Total	16 km/h (10 mph)
Longitudinal	-5 km/h (-3 mph)
Latitudinal	15 km/h (9 mph)
PDOF Angle	-70
Energy Dissipated	= 15951 Joules (11763 Ft-Lb)
Barrier Equivalent Speed	= 13.6 km/h (8.4 mph)
Calculated using size and stiffness categories.	

General Information

	Vehicle #1	Vehicle #2
Year	1992	1994
Make	Geo	Ford
Model	Metro	Explorer
CDC	01FDEW3	10LPEW3
Side Damaged	F	L
PDOF Angle	20	290
Heading Angle	180	90
Calculation method:	Size and Stiffness	Size and Stiffness
Size Category	1	1
Stiffness Category	1	3
Vehicle Weight	888 kgs (1958 lbs)	1929 kgs (4253 lbs)

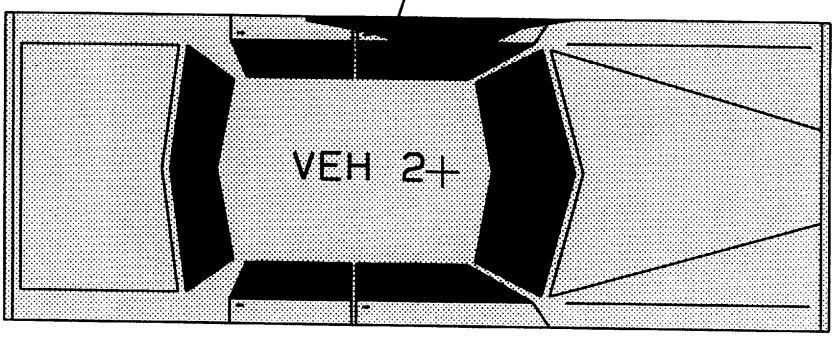
Damage Information

	Vehicle #1	Vehicle #2
Vehicle Damage Known	Yes	Yes
Crush Length	126.7 cm (50 in)	152.4 cm (60 in)
C1	42.2 cm (17 in)	2.5 cm (1 in)
C2	42.9 cm (17 in)	7.6 cm (3 in)
C3	33.7 cm (13 in)	15.2 cm (6 in)
C4	26.9 cm (11 in)	20.3 cm (8 in)
C5	23.9 cm (9 in)	5.1 cm (2 in)
C6	26.0 cm (10 in)	0.0 cm (0 in)
D	0.0 cm (0 in)	-25.3 cm (-10 in)
D'	-7.8 cm (-3 in)	-27.7 cm (-11 in)

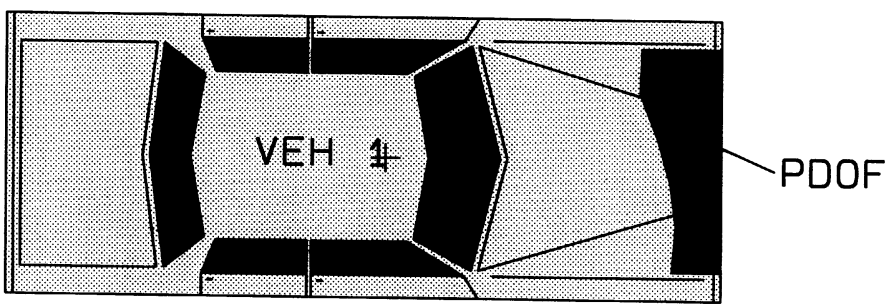
Vehicle Dimensions

	Vehicle #1	Vehicle #2
Length	374.4 cm (147 in)	465.8 cm (183 in)
Width	159.3 cm (63 in)	178.3 cm (70 in)
Wheelbase	226.6 cm (89 in)	284.2 cm (112 in)
Weight	888 kgs (1958 lbs)	1929 kgs (4253 lbs)
CG to Front of Veh	193.0 cm (76 in)	193.0 cm (76 in)
Engine Displacement	1.3 liters	4.3 liters
Moment of Inertia	112416 kgs (9950 lbs)	377904 kgs (33449 lbs)
Vehicle Mass	888 kgs (5.1 lb-s^2/in)	1929 kgs (11.1 lb-s^2/in)

1994 Ford Explorer



1992 Geo Metro



ATTACHMENT D:

Vehicle History

BEST AVAILABLE

[redacted] CHEVROLET ★ GEO, INC.

CALL WHEN READY
☐ YES
☐ NO

☑ CASH
☐ CHARGE
☑ INTERNAL & WARRANTY
☐ SENIOR CITIZEN

RENTAL
☐ YES
☐ NO

[redacted] VEH. TAG NO. GREEN YEAR 93 MODEL Ma

[redacted]

NAME

ADDRESS #4144

CITY/STATE ZIP CODE

PHONE-BUS. RES. DELIVERY DATE DELIVERY MILES

DATE COMPLETED TIME REC'D. TIME PROM. SVC. ADV. AP ACTUAL MILES 68

I HEREBY WAIVE MY RIGHT TO RECEIVE A WRITTEN ESTIMATE OF THE PRICE TO COMPLETE THE REQUESTED REPAIRS.

X ______________________

CUSTOMER LABOR CHARGES ARE

BASED ON A RATE OF $ ______ PER HOUR.

JOB # [redacted]

TERMS: STRICTLY CASH UNLESS ARRANGEMENTS MADE

I hereby authorize the repair work hereinafter set forth to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you and/or your employees permission to operate the vehicle herein described on streets, highways or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto. Customer will be held responsible for any legal fees incurred in the collection of this repair order.

AS IS: THE ONLY WARRANTIES APPLYING TO THIS PART(S) ARE THOSE WHICH MAY BE OFFERED BY THE MANUFACTURER. THE SELLING DEALER HEREBY EXPRESSLY DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY LIABILITY IN CONNECTION WITH THE SALE OF THIS PART(S) AND OR SERVICE. BUYER SHALL NOT BE ENTITLED TO RECOVER FROM THE SELLING DEALER AND CONSEQUENTIAL DAMAGES TO PROPERTY, DAMAGES FOR LOSS OF USE, LOSS OF TIME, LOSS OF PROFIT, OR INCOME, OR ANY OTHER INCIDENTAL DAMAGES.

SIGNED X ______________________

R.O. # [redacted] | ADDITIONAL REPAIRS | ADD'L REPAIRS OK'D BY | TIME

MECH. #	TIME	OPERATION
		LUBE & OIL
		ROTATE TIRES
		BRAKE SERV.
		SERVICE TRANS.
		BALANCE WHEELS
		ALIGN FRONT END
		TUNE ENGINE

PART COUNT	FAILED PART NO.	TOTAL PARTS			LABOR OPER. HRS.	O/H	SUBLET D.M. TOWING	LINE TOTAL	CLAIM TYPE	AUTH. CODE	
		SC			MSI						2.50

COMPLAINT- TECH # 3 .50

CAUSE-

CORRECTION- 4.00

COMPLAINT- ACHAM 10 TECH 3

CAUSE-

CORRECTION-

COMPLAINT- TECH #

CAUSE-

CORRECTION-

COMPLAINT- TECH #

CAUSE-

CORRECTION-

COST	QTY	PART NO.	DESCRIPTION	SALE		PARTS RET'D
		N.P.N.	SHOP SUPPLIES			
		N.P.N.	HZD WASTE REMOVABLE	$2	00	
10.00		SUBLET BVPT	P.O. NO. 81737	13.00		

QTS. OIL @

GREASE

TOTAL GAS, OIL & GREASE

WARRANTY CLAIMS COST	K	A/C #	SALE	K	INTERNAL SALES COST	K	A/C #	SALE	K	PARTS & SERVICE SALES	COST	K	A/C #	SALE	K
	C	46200		–		C	46300		–	LABOR PASS		C	46000		–
	C	46400		–		C			–	LABOR COMC'L		C	[illegible]		–
	C	48000		–		C	48100		–	PARTS PASS		C	[illegible]		–
	C	48000		–		C			–	PARTS COMC'L		C	[illegible]		–
	C	46600		–		C	46600		–	SUBLET REPAIRS		C	[illegible]		–
	C	[illegible]479		–		C	479		–	P & B MATERIAL		C	[illegible]		–
	C	47200		–		C	47300		–	LABOR-PASS BODY SHOP		C	[illegible]000		–
	C	[illegible]		–		C			–	LABOR COMC. BODY SHOP		C	[illegible]100		–
	C	47700		–		C	47700		–	PARTS PASS BODY SHOP		C	[illegible]700		–
	C	[illegible]		–		C			–	PARTS COMCL BODY SHOP		C	47800		–
	C	[illegible]476		–		C	476		–	SUBLET BODY SHOP		C	[illegible]		–
	C	[illegible]		–		C			–	SHOP SUPPLIES		C	[illegible]7804		–
CLAIM NO.	K	A/C #	WARRANTY CLAIMS TOTAL		POLICY WORK SERVICE		1301		+	INSPECTION		C	80500		–
	I	[illegible]		+	POLICY WORK NEW CARS		1501		+	TAX			32400		–
	I	[illegible]		+	POLICY WORK USED CARS		1502	18.00	+	SOURCE 33 (0)	CHARGE SALES		22000		+
	I	26300		+				12.00	+	SOURCE 33 (0)	CASH SALES		22500		+

ALL PARTS REMOVED ARE TO BE SAVED ☐ YES ☐ NO

[redacted] CHEVROLET ★ GEO, INC.

BEST AVAILABLE [redacted]

CALL WHEN READY ☐ YES ☐ NO

☐ CASH ☐ CHARGE ☐ INTERNAL & WARRANTY

☐ SENIOR CITIZEN

RENTAL ☐ YES ☐ NO

DATE	VEH. TAG NO.	YEAR	MODEL
[redacted] 13	Green	93	Metro

VEHICLE IDENTIFICATION (WARRANTY) NUMBER: J81MR3361PK2[redacted]

NAME [redacted]

ADDRESS [redacted]

CITY/STATE [redacted] ZIP CODE

PHONE-BUS. RES. [redacted] DELIVERY DATE DELIVERY MILES

DATE COMPLETED	TIME REC'D.	TIME PROM.	SVC. ADV.	ACTUAL MILES
		Wait	[illegible]	3440

I HEREBY WAIVE MY RIGHT TO RECEIVE A WRITTEN ESTIMATE OF THE PRICE TO COMPLETE THE REQUESTED REPAIRS.

X

CUSTOMER LABOR CHARGES ARE BASED ON A RATE OF $ 47.00 PER HOUR.

JOB # [redacted]

TERMS: STRICTLY CASH UNLESS ARRANGEMENTS MADE

I hereby authorize the repair work hereinafter set forth to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you and/or your employees permission to operate the vehicle herein described on streets, highways or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto. Customer will be held responsible for any legal fees incurred in the collection of this repair order.

AS IS: THE ONLY WARRANTIES APPLYING TO THIS PART(S) ARE THOSE WHICH MAY BE OFFERED BY THE MANUFACTURER. THE SELLING DEALER HEREBY EXPRESSLY DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY LIABILITY IN CONNECTION WITH THE SALE OF THIS PART(S) AND OR SERVICE. BUYER SHALL NOT BE ENTITLED TO RECOVER FROM THE SELLING DEALER AND CONSEQUENTIAL DAMAGES TO PROPERTY, DAMAGES FOR LOSS OF USE, LOSS OF TIME, LOSS OF PROFIT, OR INCOME, OR ANY OTHER INCIDENTAL DAMAGES.

SIGNED X [redacted]

R.O. [redacted] ADDITIONAL REPAIRS | ADD'L REPAIRS OK'D BY | TIME

OPERATION	AMOUNT
LUBE & OIL ☐	
ROTATE TIRES ☐	
BRAKE SERV. ☐	
SERVICE TRANS. ☐	
BALANCE WHEELS ☐	
ALIGN FRONT END ☐	
TUNE ENGINE ☐	

PART COUNT		TOTAL PARTS	C.C.	FAIL CODE	FAILED LABOR OPERATION	LABOR OPER. HRS.	OLH	SUBLET D.M. TOW			AUTH CODE	TIME

COMPLAINT- left front [illegible] TECH # 7

CAUSE-

CORRECTION-

COMPLAINT- [illegible] hitting bump TECH #

CAUSE-

CORRECTION-

COMPLAINT- TECH #

CAUSE-

CORRECTION-

COMPLAINT- TECH #

CAUSE-

CORRECTION-

COST	QTY	PART NO.	FP	DESCRIPTION	SALE	PARTS RET'N'D
				SHOP SUPPLIES		
				HZD WASTE REMOVABLE	$2 00	

SUBLET P.O. NO.

QTS. OIL @

GREASE

TOTAL GAS, OIL & GREASE

WARRANTY CLAIMS COST	K	A/C #	SALE	K	INTERNAL SALES COST	K	A/C #	SALE	K
	C	46200		–		C	46300		–
	C	46400		–		C			–
	C	48000		–		C	48100		–
	C	48000		–		C			–
	C	46600		–		C	46600		–
	C	479		–		C	479		–
	C	47200		–		C	47300		–
	C			–		C			–
	C	47700		–		C	47700		–
	C			–		C			–
	C	476		–		C	476		–
	C			–		C			–

CLAIM NO.	K	A/C #	WARRANTY CLAIMS TOTAL				
	I			+	POLICY WORK SERVICE	1301	+
	I			+	POLICY WORK NEW CARS	1501	+
	I			+	POLICY WORK USED CARS	1502	+
	I	26300		+			+

ALL PARTS REMOVED ARE TO BE SAVED ☐ YES ☐ NO

PARTS & SERVICE SALES	COST	K	A/C #	SALE	K
LABOR PASS		C	46000		–
LABOR COMC'L		C	46100		–
PARTS PASS		C	46700		–
PARTS COMC'L		C	46800		–
SUBLET REPAIRS		C	46600		–
P & S MATERIAL		C	479		–
LABOR-PASS BODY SHOP		C	47000		–
LABOR COMC. BODY SHOP		C	47100		–
PARTS PASS BODY SHOP		C	47700		–
PARTS COMCL. BODY SHOP		C	47800		–
SUBLET BODY SHOP		C	476		–
SHOP SUPPLIES		C	7804		–
INSPECTION		C	80500		–
TAX			32400		–
SOURCE 33 (0)	CHARGE SALES		22000		+
SOURCE 33 (0)	CASH SALES		22500		+

[redacted] CHEVROLET ★ GEO, INC.

BEST AVAILABLE [redacted]

CALL WHEN READY
- ☒ YES
- ☐ NO
- ☐ CASH
- ☐ CHARGE
- ☒ INTERNAL & WARRANTY
- ☐ SENIOR CITIZEN

RENTAL
- ☐ YES
- ☒ NO

DATE: [redacted] -93 | VEH. TAG NO.: Tmp | YEAR: 93 | MODEL: Metro Conv.

VEHICLE IDENTIFICATION (WARRANTY) NUMBER: J G 1 M R 3 3 6 7 P K [redacted]

NAME: [redacted]

ADDRESS: [redacted]

CITY/STATE: [redacted] ZIP CODE: [redacted]

PHONE-BUS. RES. [redacted] DELIVERY DATE DELIVERY MILES

DATE COMPLETED | TIME REC'D. | TIME PROM. | SVC. ADV.: Bill | ACTUAL MILES: 4152

I HEREBY WAIVE MY RIGHT TO RECEIVE A WRITTEN ESTIMATE OF THE PRICE TO COMPLETE THE REQUESTED REPAIRS.

X ______________________

CUSTOMER LABOR CHARGES ARE BASED ON A RATE OF $ 47.00 PER HOUR.

JOB # [redacted]

TERMS: STRICTLY CASH UNLESS ARRANGEMENTS MADE

I hereby authorize the repair work hereinafter set forth to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you and/or your employees permission to operate the vehicle herein described on streets, highways or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto. Customer will be held responsible for any legal fees incurred in the collection of this repair order.

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SIGNED X [redacted]

R.O. [redacted] | ADDITIONAL REPAIRS | ADD'L REPAIRS OK'D BY | TIME

MECH.	TIME	OPERATION	AMOUNT
		LUBE & OIL ☐	
		ROTATE TIRES ☐	
		BRAKE SERV. ☐	
		SERVICE TRANS. ☐	
		BALANCE WHEELS ☐	
		ALIGN FRONT END ☐	
		TUNE ENGINE ☐	

REPAIR COURSE	FAILED PART NO.	TOTAL PARTS	C.C.	FAIL CODE	FAILED LABOR OPERATION	LABOR OPER. HRS.	OLH	SUBLET D.M./TOWING	LINE TOTAL	CLAIM TYPE	AUTH. CODE	TIME

COMPLAINT- Install SO Speaker on Left Side — TECH # — N/C

CAUSE-

CORRECTION-

COMPLAINT- Turn Signals won't turn off After — TECH # — N/C

CAUSE- turning At times

CORRECTION-

COMPLAINT- — TECH #

CAUSE-

CORRECTION-

COMPLAINT- — TECH #

CAUSE-

CORRECTION-

COST	QTY	PART NO.	FP	DESCRIPTION	SALE	PARTS RET'D
		N.P.N.		SHOP SUPPLIES		
		N.P.N.		HZD WASTE REMOVABLE	$2 00	

SUBLET | P.O. NO.

QTS. OIL @

GREASE

TOTAL GAS, OIL & GREASE

WARRANTY CLAIMS

COST	K	A/C #	SALE	K
	C	46200		–
	C	46400		–
	C	48000		–
	C	48000		–
	C	46600		–
	C	479		–
	C	47200		–
	C			–
	C	47700		–
	C			–
	C	476		–
	C			–
CLAIM NO.	K	A/C #	WARRANTY CLAIMS TOTAL	
	I			+
	I			+
	I	26300		+

INTERNAL SALES

COST	K	A/C #	SALE	K
	C	46300		–
	C			–
	C	48100		–
	C			–
	C	46600		–
	C	479		–
	C	47300		–
	C			–
	C	47700		–
	C			–
	C	476		–
	C			–
POLICY WORK SERVICE		1301		+
POLICY WORK NEW CARS		1501		+
POLICY WORK USED CARS		1502		+
				+

PARTS & SERVICE SALES

	COST	K	A/C #	SALE	K
LABOR PASS		C	46000		–
LABOR COMC'L		C	46100		–
PARTS PASS		C	46700		–
PARTS COMC'L		C	46800		–
SUBLET REPAIRS		C	46600		–
P & B MATERIAL		C	479		–
LABOR-PASS BODY SHOP		C	47000		–
LABOR COMC. BODY SHOP		C	47100		–
PARTS PASS BODY SHOP		C	47700		–
PARTS COMCL. BODY SHOP		C	47800		–
SUBLET BODY SHOP		C	476		–
SHOP SUPPLIES		C	7804		–
INSPECTION		C	80500		–
TAX			32400		–
SOURCE 33 (0)	CHARGE SALES		22000		+
SOURCE 33 (0)	CASH SALES		22500		+

ALL PARTS REMOVED ARE TO BE SAVED ☐ YES ☐ NO

[redacted] CHEVROLET ★ GEO, INC.

BEST AVAILABLE [redacted]

CALL WHEN READY
☐ YES
☐ NO

DATE	VEH/TAG NO.	YEAR	MODEL
[redacted] 94	6KN	93	Metro

VEHICLE IDENTIFICATION (WARRANTY) NUMBER: JG1MR3367PK[redacted]

☐ CASH
☐ CHARGE
☒ INTERNAL & WARRANTY
☐ SENIOR CITIZEN

NAME [redacted]

ADDRESS [redacted]

CITY/STATE [redacted] ZIP CODE [redacted]

PHONE-BUS. [redacted] RES. | DELIVERY DATE [redacted]/93 | DELIVERY MILES

RENTAL
☐ YES
☐ NO

DATE COMPLETED	TIME REC'D.	TIME PROM.	SVC. ADV.	ACTUAL MILES
5/4			JL	18075

I HEREBY WAIVE MY RIGHT TO RECEIVE A WRITTEN ESTIMATE OF THE PRICE TO COMPLETE THE REQUESTED REPAIRS.

X ______________________

CUSTOMER LABOR CHARGES ARE BASED ON A RATE OF $ 42.00 PER HOUR.

JOB # [redacted]

TERMS: STRICTLY CASH UNLESS ARRANGEMENTS MADE

I hereby authorize the repair work hereinafter set forth to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you and/or your employees permission to operate the vehicle herein described on streets, highways or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto. Customer will be held responsible for any legal fees incurred in the collection of this repair order.

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SIGNED X [redacted]

P.O. [redacted] | ADDITIONAL REPAIRS | ADD'L REPAIRS OK'D BY | TIME

MECH. #	TIME	OPERATION	AMOUNT
		LUBE & OIL ☐	
		ROTATE TIRES ☐	
		BRAKE SERV. ☐	
		SERVICE TRANS. ☐	
		BALANCE WHEELS ☐	
		ALIGN FRONT END ☐	
		TUNE ENGINE ☐	

PART COUNT	FAILED PART NO.	TOTAL		FAILED OPERATION	LABOR OPER. HRS.	OLH	SUBLET D.M. TOWING	LINE TOTAL	CLAIM TYPE	
			SK 00	V8380	.3					14.10

COMPLAINT- Head Bolt Campaign
CAUSE- CAMP. 93C21
CORRECTION- INSTALL BOLTS
TECH # [redacted]

COMPLAINT- ENG OR VALVE RATTLE ON HEAD OR WHEN COLD
CAUSE-
CORRECTION-
TECH #

COMPLAINT-
CAUSE-
CORRECTION-
TECH #

COMPLAINT-
CAUSE-
CORRECTION-
TECH #

COST	QTY	PART NO.	DESCRIPTION	SALE		PARTS RET'D
		N.P.N. [redacted]	SHOP SUPPLIES			
		N.P.N. [redacted]	HZD WASTE REMOVABLE	$4	00	
28		[redacted]				
26		[redacted]				
38		[redacted]				
92		[redacted] 10256		1	20	

SUBLET | P.O. NO.

QTS. OIL @

GREASE

TOTAL GAS, OIL & GREASE

WARRANTY CLAIMS

COST	K	A/C #	SALE	K
	C	46200		-
	C	46400		-
	C	48000		-
	C	48000		-
	C	46600		-
	C	479		-
	C	47200		-
	C			-
	C	47700		-
	C			-
	C	476		-
	C			-

CLAIM NO.	K	A/C #	WARRANTY CLAIMS TOTAL	
	I			+
	I			+
	I	26300	15.50	+

INTERNAL SALES

COST	K	A/C #	SALE	K
	C	46300		-
	C			-
	C	48100		-
	C			-
	C	46600		-
	C	479		-
	C	47300		-
	C			-
	C	47700		-
	C			-
	C	476		-
	C			-
POLICY WORK SERVICE		1301		+
POLICY WORK NEW CARS		1501		+
POLICY WORK USED CARS		1502		+

PARTS & SERVICE SALES

	COST	K	A/C #	SALE	K
LABOR PASS		C	46000		-
LABOR COMC'L		C	46100		-
PARTS PASS		C	46700		-
PARTS COMC'L		C	46800		-
SUBLET REPAIRS		C	46500		-
P & B MATERIAL		C	479		-
LABOR-PASS BODY SHOP		C	47000		-
LABOR COMC. BODY SHOP		C	47100		-
PARTS PASS BODY SHOP		C	47700		-
PARTS COMC'L BODY SHOP		C	47800		-
SUBLET BODY SHOP		C	476		-
SHOP SUPPLIES		C	7804		-
INSPECTION		C	80500		-
TAX			32400		-
SOURCE	CHARGE SALES		22000		+
SOURCE	CASH SALES		22500		+

ALL PARTS REMOVED ARE TO BE SAVED S ☐ YES ☐ NO S

ATTACHMENT E:

NASS Vehicle Forms

U.S. Department of Transportation
National Highway Traffic Safety Administration

GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number - Stratum 94-41
3. Vehicle Number 01

VEHICLE IDENTIFICATION

4. Vehicle Model Year 92
   Code the last two digits of the model year
   (99) Unknown

5. Vehicle Make (specify): 20
   GEO
   Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
   (99) Unknown

6. Vehicle Model (specify): 034
   METRO CONVERTIBLE LXi
   Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
   (999) Unknown

7. Body Type 01
   Note: Applicable codes may be found on the back of this page.

8. Vehicle Identification Number
   JG1MR3367PK_____
   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
   Left justify; Slash zeros and letter Z (0 and Z)
   No VIN—Code all zeros
   Unknown—Code all nines

9. Vehicle Special Use (This Trip) 0
   (0) No special use
   (1) Taxi
   (2) Vehicle used as school bus
   (3) Vehicle used as other bus
   (4) Military
   (5) Police
   (6) Ambulance
   (7) Fire truck or car
   (8) Other (specify): _____
   (9) Unknown

OFFICIAL RECORDS

10. Police Reported Vehicle Disposition 1
    (0) Not towed due to vehicle damage
    (1) Towed due to vehicle damage
    (9) Unknown

11. Police Reported Travel Speed 089
    Code to the nearest kmph (NOTE: 000 means less than 0.5 kmph)
    (160) 159.5 kmph and above
    (999) Unknown

    ___ mph X 1.6093 = ___ kmph

12. Speed Limit 089
    (000) No statutory limit
    Code posted or statutory speed limit in kmph
    (999) Unknown

    ___ mph X 1.6093 = ___ kmph

13. Police Reported Alcohol Presence For Driver 0
    (0) No alcohol present
    (1) Yes alcohol present
    (7) Not reported
    (8) No driver present
    (9) Unknown

14. Alcohol Test Result For Driver 96
    Code actual value (decimal implied before first digit—0.xx)
    (95) Test refused
    (96) None given
    (97) AC test performed, results unknown
    (98) No driver present
    (99) Unknown

    Source: _____

15. Police Reported Other Drug Presence For Driver 7
    (0) No other drug(s) present
    (1) Yes other drug(s) present
    (7) Not reported
    (8) No driver present
    (9) Unknown

16. Other Drug Specimen Test Result For Driver 0
    (0) No specimen test given
    (1) Drug(s) not found in specimen
    (2) Drug(s) found in specimen, (specify):
    _____
    (3) Specimen test given, results unknown or not obtained
    (8) No driver present
    (9) Unknown if specimen test given

17. Driver's Zip Code [redacted]
    (00001) Driver not a resident of U.S. or territories
    _____ Code actual 5-digit zip code
    (99998) No driver present
    (99999) Unknown

18. Driver's Race/Ethnic Origin 1
    (1) White (non-Hispanic)
    (2) Black (non-Hispanic)
    (3) White (Hispanic)
    (4) Black (Hispanic)
    (5) American Indian, Eskimo or Aleut
    (6) Asian or Pacific Islander
    (7) Other (specify):
    _____
    (8) No driver present
    (9) Unknown

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

(01) Convertible (excludes sun-roof, t-bar)
(02) 2-door sedan, hardtop, coupe
(03) 3-door/2-door hatchback
(04) 4-door sedan, hardtop
(05) 5-door/4-door hatchback
(06) Station wagon (excluding van and truck based)
(07) Hatchback, number of doors unknown
(08) Other automobile type (specify):

_____

(09) Unknown automobile type

Automobile Derivatives

(10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
(11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
(12) Large limousine - more than four side doors or stretched chassis
(13) Three-wheel automobile or automobile derivative

Utility Vehicles (≤ 4,536 kgs GVWR)

(14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [76 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Passport, Samurai, Sidekick, Rocky)
(15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Hummer, Landcruiser, Rover, Scout, Yukon)
(16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
(19) Utility, unknown body type

Van Based Light Trucks (≤ 4,536 kgs GVWR)

(20) Minivan (Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Vista, Aerostar, Windstar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Expo Wagon, Vanagon/Camper.)
(21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
(22) Step van or walk-in van (≤ 4,536 kgs GVWR)
(23) Van based motorhome (≤ 4,536 kgs GVWR)
(24) Van based school bus (≤ 4,536 kgs GVWR)
(25) Van based other bus (≤ 4,536 kgs GVWR)
(28) Other van type (Hi-Cube Van, Kary) (specify):

_____

(29) Unknown van type

Light Conventional Trucks (Pickup style cab, ≤ 4,536 kgs GVWR)

(30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10 , T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
(31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500, T100)
(32) Pickup with slide-in camper
(33) Convertible pickup
(39) Unknown pickup style light conventional truck type

Other Light Trucks (≤ 4,536 kgs GVWR)

(40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
(41) Truck based panel
(42) Light truck based motorhome (chassis mounted)
(45) Other light conventional truck type
(48) Unknown light truck type
(49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

(50) School bus (designed to carry students, not cross country or transit)
(58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify):

_____

(59) Unknown bus type

Medium/Heavy Trucks (> 4,536 kgs GVWR)

(60) Step van (> 4,536 kgs GVWR)
(61) Single unit straight truck (4,536 kgs < GVWR ≤ 8,845 kgs)
(62) Single unit straight truck (8,845 kgs < GVWR ≤ 11,793 kgs)
(63) Single unit straight truck (> 11,793 kgs GVWR)
(64) Single unit straight truck, GVWR unknown
(65) Medium/heavy truck based motorhome
(67) Truck-tractor with no cargo trailer
(68) Truck-tractor pulling one trailer
(69) Truck-tractor pulling two or more trailers
(70) Truck-tractor (unknown if pulling trailer)
(78) Unknown medium/heavy truck type
(79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

(80) Motorcycle
(81) Moped (motorized bicycle)
(82) Three-wheel motorcycle or moped
(88) Other motored cycle (minibike, motorscooter) (specify):_____
(89) Unknown motored cycle type

Other Vehicles

(90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
(91) Snowmobile
(92) Farm equipment other than trucks
(93) Construction equipment other than trucks
(97) Other vehicle type
(99) Unknown body type

PRECRASH ENVIRONMENTAL DATA

19. Relation To Interchange Or Junction — 3
(0) Non-interchange area and non-junction
(1) Interchange area related

Non-Interchange junctions
(2) Intersection related
(3) Driveway, alley access related
(4) Other junction (specify) _____
(5) Unknown type of junction
(9) Unknown

20. Trafficway Flow — 0
(0) Not physically divided (two way traffic)
(1) Divided trafficway-median strip without positive barrier
(2) Divided trafficway-median strip with positive barrier
(3) One way traffic
(9) Unknown

21. Number Of Travel Lanes — 2
(1) One
(2) Two
(3) Three
(4) Four
(5) Five
(6) Six
(7) Seven or more
(9) Unknown

22. Roadway Alignment — 1
(1) Straight
(2) Curve right
(3) Curve left
(9) Unknown

23. Roadway Profile — 1
(1) Level
(2) Uphill grade (>2%)
(3) Hill crest
(4) Downhill grade (>2%)
(5) Sag
(9) Unknown

24. Roadway Surface Type — 2
(1) Concrete
(2) Bituminous (asphalt)
(3) Brick or block
(4) Slag, gravel, or stone
(5) Dirt
(8) Other (specify): _____
(9) Unknown

25. Roadway Surface Condition — 2
(1) Dry
(2) Wet
(3) Snow or slush
(4) Ice
(5) Sand, dirt, or oil
(8) Other (specify): _____
(9) Unknown

26. Light Conditions — 1
(1) Daylight
(2) Dark
(3) Dark, but lighted
(4) Dawn
(5) Dusk
(9) Unknown

27. Atmospheric Conditions — 1
(0) No adverse atmospheric-related driving conditions
(1) Rain
(2) Sleet/hail
(3) Snow
(4) Fog
(5) Rain and fog
(6) Sleet and fog
(7) Other (e.g., smog, smoke, blowing sand or dust, etc.) (specify): _____
(9) Unknown

28. Traffic Control Device — 0
(0) No traffic control(s)
(1) Traffic control signal (not RR crossing)

Regulatory
(2) Stop sign
(3) Yield sign
(4) School zone sign
(5) Other regulatory sign (specify): _____
(6) Warning sign (not RR crossing)
(7) Unknown sign
(8) Miscellaneous/other controls including RR controls (specify): _____
(9) Unknown

29. Traffic Control Device Functioning — 0
(0) No traffic control device
(1) Traffic control device not functioning (specify): _____
(2) Traffic control device functioning properly
(9) Unknown

PRECRASH DRIVER RELATED DATA

30. Driver's Distraction/Inattention To Driving (Prior To Recognition Of Critical Event) 01
(00) No driver present
(01) Attentive or not distracted
(02) Looked but did not see

Distractions
(03) By other occupant(s), (specify): _____
(04) By moving object in vehicle (specify): _____
(05) While talking or listening to cellular phone (specify location and type of phone): _____
(06) While dialing cellular phone (specify location and type of phone): _____
(07) While adjusting climate controls
(08) While adjusting radio, cassette, CD (specify): _____
(09) While using other device/controls integral to vehicle (specify): _____
(10) While using or reaching for device/object brought into vehicle (specify): _____
(11) Sleepy or fell asleep
(12) Distracted by outside person, object, or event (specify): _____
(13) Eating or drinking
(14) Smoking related
(97) Distracted/inattentive, details unknown
(98) Other, distraction (specify): _____
(99) Unknown

31. Pre-Event Movement (Prior to Recognition of Critical Event) 01
(00) No driver present
(01) Going straight
(02) Decelerating in traffic lane
(03) Accelerating in traffic lane
(04) Starting in traffic lane
(05) Stopped in traffic lane
(06) Passing or overtaking another vehicle
(07) Disabled or parked in travel lane
(08) Leaving a parking position
(09) Entering a parking position
(10) Turning right
(11) Turning left
(12) Making a U-turn
(13) Backing up (other than for parking position)
(14) Negotiating a curve
(15) Changing lanes
(16) Merging
(17) Successful avoidance maneuver to a previous critical event
(97) Other (specify): _____
(99) Unknown

32. Critical Precrash Event 72

THIS VEHICLE LOSS OF CONTROL DUE TO:
(01) Blow out or flat tire
(02) Stalled engine
(03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
(04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
(05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
(06) Traveling too fast for conditions
(08) Other cause of control loss (specify): _____
(09) Unknown cause of control loss

THIS VEHICLE TRAVELLING
(10) Over the lane line on left side of travel lane
(11) Over the lane line on right side of travel lane
(12) Off the edge of the road on the left side
(13) Off the edge of the road on the right side
(14) End departure
(15) Turning left at intersection
(16) Turning right at intersection
(17) Crossing over (passing through) intersection
(18) This vehicle decelerating
(19) Unknown travel direction

OTHER MOTOR VEHICLE IN LANE
(50) Other vehicle stopped
(51) Traveling in same direction with lower steady speed
(52) Traveling in same direction while decelerating
(53) Traveling in same direction with higher speed
(54) Traveling in opposite direction
(55) In crossover
(56) Backing
(59) Unknown travel direction of other motor vehicle in lane

OTHER MOTOR VEHICLE ENCROACHING INTO LANE
(60) From adjacent lane (same direction)—over left lane line
(61) From adjacent lane (same direction)—over right lane line
(62) From opposite direction—over left lane line
(63) From opposite direction—over right lane line
(64) From parking lane
(65) From crossing street, turning into same direction
(66) From crossing street, across path
(67) From crossing street, turning into opposite direction
(68) From crossing street, intended path not known
(70) From driveway, turning into same direction
(71) From driveway, across path
(72) From driveway, turning into opposite direction
(73) From driveway, intended path not known
(74) From entrance to limited access highway
(78) Encroachment by other vehicle—details unknown

PEDESTRIAN, PEDALCYCLIST, OR OTHER NONMOTORIST
(80) Pedestrian in roadway
(81) Pedestrian approaching roadway
(82) Pedestrian—unknown location
(83) Pedalcyclist or other nonmotorist in roadway (specify): _____
(84) Pedalcyclist or other nonmotorist approaching roadway, (specify): _____
(85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

OBJECT OR ANIMAL
(87) Animal in roadway
(88) Animal approaching roadway
(89) Animal—unknown location
(90) Object in roadway
(91) Object approaching roadway
(92) Object—unknown location
(98) Other critical precrash event (specify): _____
(99) Unknown

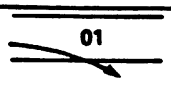
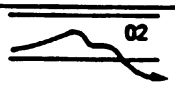
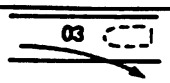
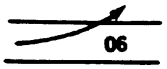
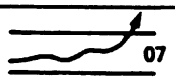
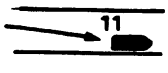
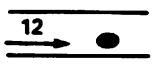
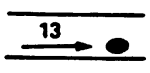
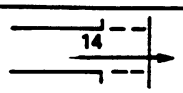
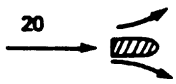
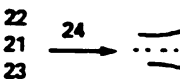
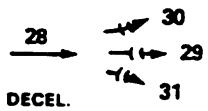
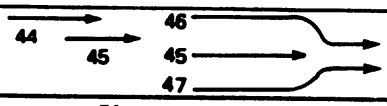
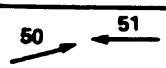
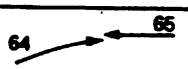
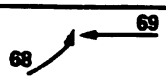
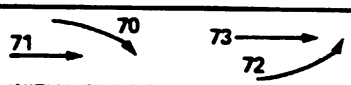
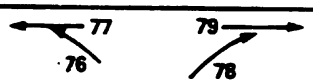
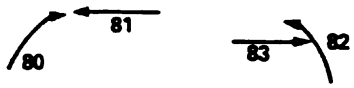
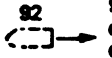
33. Attempted Avoidance Maneuver 02
(00) No driver present
(01) No avoidance maneuver
(02) Braking (no lockup)
(03) Braking (lockup)
(04) Braking (lockup unknown)
(05) Releasing brakes
(06) Steering left
(07) Steering right
(08) Braking and steering left
(09) Braking and steering right
(10) Accelerating
(11) Accelerating and steering left
(12) Accelerating and steering right
(98) Other action (specify): _____
(99) Unknown

34. Pre-Impact Stability 1
(0) No driver present
(1) Tracking
(2) Skidding longitudinally—rotation less than 30 degrees
(3) Skidding laterally—clockwise rotation
(4) Skidding laterally—counterclockwise rotation
(7) Other vehicle loss-of-control (specify): _____
(9) Precrash stability unknown

35. Pre-Impact Location 1
(0) No driver present
(1) Stayed in original travel lane
(2) Stayed on roadway but left original travel lane
(3) Stayed on roadway, not known if left original travel lane
(4) Departed roadway
(5) Remained off roadway
(6) Returned to roadway
(7) Entered roadway
(9) Unknown

36. Accident Type 83
(Note: Applicable codes on back of this page)
(00) No impact
Code the number of the diagram that best describes the accident circumstance
(98) Other accident type (specify): _____
(99) Unknown

STOP HERE IF GV07 DOES NOT EQUAL 01 - 49

Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I. Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II Same Trafficway Same Direction	D Rear-End	 20 22 21 23 STOPPED 21, 22, 23	 24 26 25 27 SLOWER 25, 26, 27	 28 30 29 31 DECEL. 29, 30, 31	(EACH • 32) SPECIFICS OTHER	(EACH • 33) SPECIFICS UNKNOWN
	E Forward Impact	 34 35 CONTROL/ TRACTION LOSS	 36 37 CONTROL/ TRACTION LOSS	 38 39 AVOID COLLISION WITH VEH.	 40 41 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER	(EACH • 43) SPECIFICS UNKNOWN
	F Sideswipe Angle	 44 45 46 45 47			(EACH • 48) SPECIFICS OTHER	(EACH • 49) SPECIFICS UNKNOWN	
III Same Trafficway Opposite Direction	G Head-On	 50 51 LATERAL MOVE	(EACH • 52) SPECIFICS OTHER		(EACH • 53) SPECIFICS UNKNOWN		
	H Forward Impact	 54 55 CONTROL/ TRACTION LOSS	 56 57 CONTROL/ TRACTION LOSS	 58 59 AVOID COLLISION WITH VEH.	 60 61 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER	(EACH • 63) SPECIFICS UNKNOWN
	I Sideswipe Angle	 64 65 LATERAL MOVE	(EACH • 66) SPECIFICS OTHER		(EACH • 67) SPECIFICS UNKNOWN		
IV Change Trafficway Vehicle Turning	J. Turn Across Path	 68 69 INITIAL OPPOSITE DIRECTIONS	 71 70 73 72 INITIAL SAME DIRECTIONS			(EACH • 74) SPECIFICS OTHER	(EACH • 75) SPECIFICS UNKNOWN
	K. Turn Into Path	 77 76 79 78 TURN INTO SAME DIRECTION	 81 80 83 82 TURN INTO OPPOSITE DIRECTIONS			(EACH • 84) SPECIFICS OTHER	(EACH • 85) SPECIFICS UNKNOWN
V Intersecting Paths (Vehicle Damage)	L. Straight Paths	 87 86 88 89			(EACH • 90) SPECIFICS OTHER	(EACH • 91) SPECIFICS UNKNOWN	
VI Miscellaneous	M. Backing Etc.	 92 BACKING VEH. 93 OTHER VEH. OR OBJECT			98 Other Accident Type 99 Unknown Accident Type 00 No Impact		

OCCUPANT RELATED

37. Driver Presence in Vehicle: 1
(0) Driver not present
(1) Driver present
(9) Unknown

38. Number of Occupants This Vehicle: 03
(00-96) Code actual number of occupants for this vehicle
(97) 97 or more
(99) Unknown

39. Number of Occupant Forms Submitted: 01

AIR BAG RELATED

40. Is this an AOPS Vehicle? 1
(0) No (includes unknown)
(1) Yes - researcher determined
(2) VIN determined air bag system
(3) VIN determined automatic (passive) belts
(4) VIN determined air bag and automatic (passive) belts

41. Air Bag(s) Deployment, First Seat Frontal 2
(0) Not equipped or not available
(1) No air bags deployed

Single Air Bag Vehicle
(2) Driver air bag deployed
(3) Driver air bag, unknown if deployed

Multiple Air Bag Vehicle
(4) Driver side only deployed
(5) Passenger side only deployed
(6) Driver and passenger side deployed
(7) Driver and passenger side unknown if deployed
(8) Air bag(s) deployed, details unknown
(9) Unknown

42. Air Bag(s) Deployment, Other Than First Seat Frontal 0
(0) Not equipped with an "other" air bag
(1) Deployed during accident (as a result of impact)
(2) Deployed inadvertently just prior to accident
(3) Deployed, details unknown
(4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(5) Unknown if deployed
(7) Nondeployed
(9) Unknown

Specify type of "other" air bag present: _____

VEHICLE WEIGHT ITEMS

43. Vehicle Curb Weight: 0,800 0
____ Code weight to nearest 10 kilograms.
(045) Less than 454 kilograms
(612) 6,124 kilograms or more
(999) Unknown
1,795 lbs X .4536 = 0,795 kgs
Source: [redacted]

44. Vehicle Cargo Weight: 0,000 0
____ Code weight to nearest 10 kilograms.
(000) Less than 5 kilograms
(454) 4,536 kilograms or more
(999) Unknown
___,___ lbs X .4536 = ___,___ kgs
Source: _____

ROLLOVER DATA

45. Rollover: 00
(00) No rollover (no overturning)

Rollover (primarily about the longitudinal axis)
(01-16) Code the number of quarter turns
(17) Rollover, 17 or more quarter turns (specify): _____
(98) Rollover--end-over-end (i.e., primarily about the lateral axis)
(99) Rollover (overturn), details unknown

46. Rollover Initiation Type: 00
(00) No rollover
(01) Trip-over
(02) Flip-over
(03) Turn-over
(04) Climb-over
(05) Fall-over
(06) Bounce-over
(07) Collision with another vehicle
(08) Other rollover initiation type specify): _____
(98) Rollover--end-over-end
(99) Unknown rollover initiation type

47. Location of Rollover Initiation: 0
(0) No rollover
(1) On roadway
(2) On shoulder—paved
(3) On shoulder—unpaved
(4) On roadside or divided trafficway median
(8) Rollover--end-over-end
(9) Unknown

48. Rollover Initiation Object Contacted: 00
(Note: Applicable codes on back of page)

49. Location on Vehicle Where Initial Principal Tripping Force Is Applied: 0
(0) No rollover
(1) Wheels/tires
(2) Side plane
(3) End plane
(4) Undercarriage
(5) Other location on vehicle (specify): _____
(6) Non-contact rollover forces (specify): _____
(8) Rollover--end-over-end
(9) Unknown

50. Direction of Initial Roll: 0
(0) No rollover
(1) Roll right - primarily about the longitudinal axis
(2) Roll left - primarily about the longitudinal axis
(8) Rollover--end-over-end
(9) Unknown roll direction

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

(00) No rollover
(01-30) — Vehicle Number

Noncollision
(31) Turn-over — fall-over
(32) No rollover impact initiation (end-over-end)
(34) Jackknife

Collision With Fixed Object
(41) Tree (≤ 10 cm in diameter)
(42) Tree (> 10 cm in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
(50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail) (specify):_____

(57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

(69) Unknown fixed object

Collision with Nonfixed Object
(70) Passenger car, light truck, van, or other vehicle not in-transport
(71) Medium/heavy truck or bus not in-transport
(76) Animal
(77) Train
(78) Trailer, disconnected in transport
(79) Object fell from vehicle in-transport
(88) Other nonfixed object (specify):

(89) Unknown nonfixed object

(98) Other event (specify):

(99) Unknown event or object

OVERRIDE/UNDERRIDE (THIS VEHICLE)

51. Front Override/Underride (this Vehicle) 0

52. Rear Override/Underride (this Vehicle) 0

(0) No override/underride, or not an end-to-end impact between two CDS applicable vehicles, and no medium/heavy truck or bus underride

Override (see specific CDC)
[Between 2 CDS applicable vehicles (Bodytype, GV07 = 1-49)]
(1) 1st CDC
(2) 2nd CDC
(3) Other not automated CDC (specify):

_____

Underride (see specific CDC)
[Between 2 CDS applicable vehicles (Bodytype, GV07 = 1-49)]
(4) 1st CDC
(5) 2nd CDC
(6) Other not automated CDC (specify):

_____

(7) Medium/heavy truck or bus override (of any configuration)
(9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value
(996) Non-horizontal impact
(997) Noncollision
(998) Impact with object
(999) Unknown

53. Heading Angle For This Vehicle 180

54. Heading Angle For Other Vehicle 090

RECONSTRUCTION DATA

55. Towed Trailing Unit 0
(0) No towed unit
(1) Yes—towed trailing unit
(9) Unknown

56. Documentation of Trajectory Data for This Vehicle 0
(0) No
(1) Yes

57. Post Collision Condition of Tree or Pole (For Highest Delta V) 0
(0) Not collision (for highest delta V) with tree or pole
(1) Not damaged
(2) Cracked/sheared
(3) Tilted <45 degrees
(4) Tilted ≥45 degrees
(5) Uprooted tree
(6) Separated pole from base
(7) Pole replaced
(8) Other (specify):

_____

(9) Unknown

ACCIDENT RECONSTRUCTION PROGRAMS HIGHEST DELTA V

58. Basis for Total (Resultant) Delta V (highest) 01

(00) No vehicle inspection

Delta V Calculated
(01) Reconstruction program-damage only routine
(02) Reconstruction program-damage and trajectory routine
(03) Missing vehicle algorithm

Delta V Not Calculated
(04) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.

All vehicles within scope (CDC applicable) of reconstuction program but one of the collision conditions is beyond the scope of the reconstruction program or other acceptable reconstruction technique, regardless of adequacy of damage data.

(05) Rollover
(06) Other non-horizontal forces
(07) Sideswipe type damage
(08) Severe override
(09) Yielding object
(10) Overlapping damage
(11) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available, (specify):

_____

_____

(98) Other, (specify): _____

_____

COMPUTER GENERATED CRASH SEVERITY

59. Total Delta V — Highest: 035

_____ Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)
(160) 159.5 kmph and above
(999) Unknown

60. Longitudinal Component of Delta V — Highest: ±0020

_____ Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: __000 means greater than -0.5 kmph and less than +0.5 kmph)
(±160) ±159.5 kmph and above
(__999) Unknown

61. Lateral Component of Delta V — Highest: ±0007

_____ Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: __000 means greater than -0.5 kmph and less than +0.5 kmph)
(±160) ±159.5 kmph and above
(__999) Unknown

62. Energy Absorption — Highest: 062,800

_____ Nearest 100 joules (highest)

_____ Nearest 100 joules (secondary)

(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

63. Impact Speed — Highest: 999

_____ Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)
(160) 159.5 kmph and above
(998) Trajectory algorithm not run
(999) Unknown

DELTA V CONFIDENCE LEVEL

64. Confidence In Reconstruction Program Results (For Highest Delta V): 1
(0) No reconstruction
(1) Collision fits model — results appear reasonable
(2) Collision fits model — results appear high
(3) Collision fits model — results appear low
(4) Borderline reconstruction — results appear reasonable

OTHER SPEED ESTIMATE

65. Barrier Equivalent Speed — Highest: 037

_____ Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)
(160) 159.5 kmph and above
(999) Unknown

ESTIMATED DELTA V

66. Estimated Highest Delta V (Researcher Determined) 0
    (0) Reconstruction Delta V coded

    Estimated Delta V
    (1) Less than 10 kmph
    (2) ≥ 10 kmph but < 25 kmph
    (3) ≥ 25 kmph but < 40 kmph
    (4) ≥ 40 kmph but < 55 kmph
    (5) ≥ 55 kmph

    Other estimates of damage severity
    (6) Minor
    (7) Moderate
    (8) Severe

    (9) Unknown

INSPECTION TYPE

67. Type of Vehicle Inspection 1
    (0) No inspection
    (1) Vehicle fully repaired-no damage evident
    (2) Partial inspection (specify): _____
    (3) Complete inspection

DELTA V EVENT NUMBER

68. Delta V Event Number 1
    _____ Code the accident event sequence number that resulted in the Delta V that has been coded above for this vehicle
    (99) Unknown

***** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV67 = 0), *****

DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS

***** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE *****

THE EXTERIOR VEHICLE, INTERIOR VEHICLE,

OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

U.S. Department of Transportation
National Highway Traffic Safety Administration

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number - Stratum 94-41
3. Vehicle Number 01

VEHICLE IDENTIFICATION

VIN JG1MR3367PK~~~~~~~~~~~~ Model Year 93

Vehicle Make (specify): GEO

Vehicle Model (specify): METRO LXi CONV.

LOCATOR

Locate the end of the damage with respect to the vehicle's damaged center point or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L	Location of Max Crush
1	BUMPER FASCIA	BUMPER RE-BAR	34.3" INBOARD OF LF CORNER

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

Specific Impact Number	Plane of Impact C-Measurements	Direct Damage Width (CDC)	Direct Damage Max Crush	Field L	C_1	C_2	C_3	C_4	C_5	C_6	±D
1	RE-BAR	135.9	43.5	126.7	42.2	42.9	33.7	27.0	23.8	26.0	0

VEHICLE DAMAGE SKETCH

TIRE—WHEEL DAMAGE

a. Rotation physically restricted

RF	1
LF	1
RR	2
LR	2

b. Tire deflated

RF	2
LF	2
RR	2
LR	2

(1) Yes (2) No (8) NA (9) Unk.

TYPE OF TRANSMISSION

☒ Manual ☐ Automatic

END SHIFT ≥ 10 CM

☐ Yes ☒ No

ORIGINAL SPECIFICATIONS

Wheelbase	227	cm
Overall Length	374	cm
Maximum Width	159	cm
Curb Weight	795	kg
Average Track	135.3	cm
Front Overhang		cm
Rear Overhang		cm
Undeformed End Width		cm
Engine Size: cyl./displ.	1.3	L

WHEEL STEER ANGLES

(For locked front wheels or displaced rear axles only)

RF ± ____ ____ °
LF ± ____ ____ °
RR ± ____ ____ °
LR ± ____ ____ °

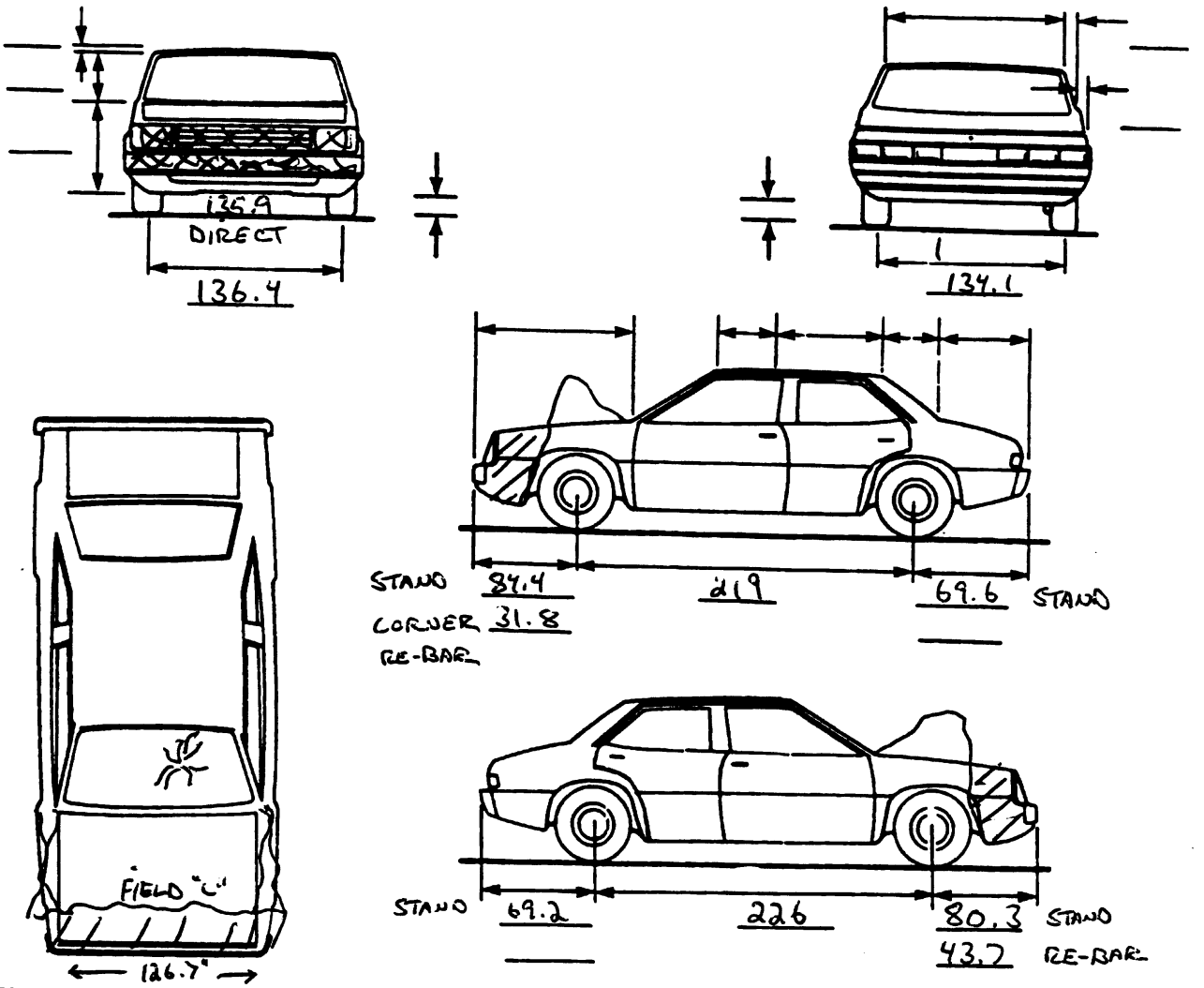
Within ± 5 degrees

DRIVE WHEELS

☒ FWD ☐ RWD ☐ 4WD

Approximate Cargo Weight 0 kg

MEASUREMENTS IN CENTIMETERS



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED

(01-30) — Vehicle Number

Noncollision
- (31) Overturn — rollover (excludes end-over-end)
- (32) Rollover—end-over-end
- (33) Fire or explosion
- (34) Jackknife
- (35) Other intraunit damage (specify): _____
- (36) Noncollision injury
- (38) Other noncollision (specify): _____
- (39) Noncollision — details unknown

Collision With Fixed Object
- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment
- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)
- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail) (specify): _____
- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): _____
- (69) Unknown fixed object

Collision with Nonfixed Object
- (70) Passenger car, light truck, van, or other vehicle not in-transport
- (71) Medium/heavy truck or bus not in-transport
- (72) Pedestrian
- (73) Cyclist or cycle
- (74) Other nonmotorist or conveyance _____
- (75) Vehicle occupant
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (79) Object fell from vehicle in-transport
- (88) Other nonfixed object (specify): _____
- (89) Unknown nonfixed object
- (98) Other event (specify): _____
- (99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
01	02	020	00	F	D	E	W	03

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. 01	5. 02	6. 01	7. F	8. D	9. E	10. W	11. 03

Second Highest Delta "V"

12.	13.	14.	15.	16.	17.	18.	19.

CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

20. L	21. C_1	C_2	C_3	C_4	C_5	C_6	22. ±D
127	042	043	034	027	024	026	+ 000

Second Highest Delta "V"

23. L	24. C_1	C_2	C_3	C_4	C_5	C_6	25. ±D
							+

26. Undeformed End Width (Coded when highest severity impact is an end plane impact.) 136
- ____ Code to the nearest centimeter
- (250) 250 centimeters or more
- (998) No highest severity end plane impact
- (999) Unknown

27. Direct Damage Width (For highest severity impact) 136
- ____ Code to the nearest centimeter
- (250) 250 centimeters or more
- (999) Unknown

28. Original Wheelbase 227
- ____ Code to the nearest centimeter
- (650) 650 centimeters or more
- (999) Unknown

___ . __ inches X 2.54 = ___ centimeters

29. Original Average Track Width 135
- ____ Code to the nearest centimeter
- (185) 185 centimeters or more
- (999) Unknown

___ . __ inches X 2.54 = ___ centimeters

30. Are CDCs Documented but Not Coded on The Automated File? 0
(0) No
(1) Yes

31. Researcher's Assessment of Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

32. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle? 0
(0) No post manufacturer modifications
(1) Yes - post manufacturer modifications (specify): _____
(Include photograph of CERTIFICATION PLACARD in case report)
(9) Unknown if vehicle is modified

FIRE OCCURRENCE

33. Fire Occurrence 0
(0) No fire

Yes, fire occurred
(1) Minor
(2) Major
(9) Unknown

34. Origin of Fire 0
(0) No fire
(1) Vehicle exterior (front, side, back, top)
(2) Exhaust system
(3) Fuel tank (and other fuel retention system parts)
(4) Engine compartment
(5) Cargo/trunk compartment
(6) Instrument panel
(7) Passenger compartment area
(8) Other location (specify): _____
(9) Unknown

FUEL SYSTEM

35. Location of Fuel Tank-1 Filler Cap 2

36. Location of Fuel Tank-2 Filler Cap 0
(0) No fuel tank
(1) On back plane
(2) Aft of center of the rear wheels (rear axle) on left side plane
(3) Aft of center of the rear wheels (rear axle) on right side plane
(4) Forward of center of the rear wheels (rear axle) on left side plane
(5) Forward of center of the rear wheels (rear axle) on right side plane
(6) Over the center of the rear wheels (rear axle) on left side plane
(7) Over the center of the rear wheels (rear axle) on right side plane
(8) Other (specify): _____
(9) Unknown

37. Type of Fuel Tank-1 1

38. Type of Fuel Tank-2 0
(0) No fuel tank (electrical vehicle)
(1) Metallic
(2) Non-metallic
(9) Unknown

39. Location of Fuel Tank-1 1

40. Location of Fuel Tank-2 0
(0) No fuel tank
(1) Aft of center of the rear wheels (rear axle) centered
(2) Aft of center of the rear wheels (rear axle) left side
(3) Aft of center of the rear wheels (rear axle) right side
(4) Forward of center of the rear wheels (rear axle) centered
(5) Forward of center of the rear wheels (rear axle) left side
(6) Forward of center of the rear wheels (rear axle) right side
(7) Over center of the rear wheels (rear axle)
(8) Other (specify): _____
(9) Unknown

41. Damage to Fuel Tank-1 1

42. Damage to Fuel Tank-2 0
(0) No fuel tank
(1) No damage to fuel tank
(2) Deformed, no seam failure
(3) Deformed, with a seam failure
(4) Punctured
(5) Lacerated (ripped)
(6) Abraded (scraped)
(7) Filler neck separation from the fuel tank
(8) Other damage (specify): _____
(9) Unknown

43. Leakage Location of Fuel System-1 1

44. Leakage Location of Fuel System-2 0
(0) No fuel tank
(1) No fuel leakage

Primary Area Of Leakage
(2) Tank
(3) Filler neck
(4) Cap
(5) Lines/pump/filter
(6) Vent/emission recovery
(8) Other (specify): _____
(9) Unknown

45. Fuel Type-1 01

46. Fuel Type-2 00

Single Fuel Type
(00) No fuel tank
(01) Gasoline
(02) Diesel
(03) CNG (Compressed Natural Gas)
(04) LPG (Liquid Petroleum Gas) also known as Propane
(05) LNG (Liquid Natural Gas)
(06) Methanol (M100 or M85)
(07) Ethanol (E100 or E85)
(08) Other (Hydrogen or others) (specify):
_____

Electric Powered or Electric/Solar Powered Vehicles
(10) Lead Acid Battery
(11) Nickel-Iron Battery
(12) Nickel-Cadmium Battery
(13) Sodium Metal Chloride Battery
(14) Sodium Sulfur Battery
(18) Other (Specify): _____

(98) Other Hybrid (specify):
_____

(99) Unknown fuel type

47. Is This Vehicle Equipped With More Than Two Fuel Tanks? 0
(0) No (one or two tanks only)

Yes - More Than Two Tanks
(1) Yes -- no damage to any tank or filler cap and no fuel system leakage
(2) Yes -- no damage to any tank or filler cap but there is fuel system leakage (specify leakage location):
_____
(3) Yes -- damage to an additional tank or filler cap and there is fuel system leakage (specify the following):
Type of tank _____
Tank location _____
Filler cap location _____
Tank damage _____
Location of leakage _____
Type of fuel _____
(9) Unknown if more than two tanks

COMMENTS

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED ***

(GV10=0)

DO NOT COMPLETE THE INTERIOR VEHICLE FORM.

U.S. Department of Transportation
National Highway Traffic Safety Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____

2. Case Number - Stratum 94-41

3. Vehicle Number 01

INTEGRITY

4. Passenger Compartment Integrity 00
(00) No integrity loss

Yes, Integrity Was Lost Through
(01) Windshield
(02) Door (side)
(03) Door/hatch (back door)
(04) Roof
(05) Roof glass
(06) Side window
(07) Rear window (backlight)
(08) Roof and roof glass
(09) Windshield and door (side)
(10) Windshield and roof
(11) Side and rear window (side window and backlight)
(12) Windshield and side window
(13) Door and side window
(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 0 8. RR 0 9. TG/H 0

(0) No door/gate/hatch
(1) Door/gate/hatch remained closed and operational
(2) Door/gate/hatch came open during collision
(3) Door/gate/hatch jammed shut
(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then code Ø

10. LF 1 11. RF 1 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision
(1) Door operational (no damage)
(2) Latch/striker failure due to damage
(3) Hinge failure due to damage
(4) Door structure failure due to damage
(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage
(6) Latch/striker and hinge failure due to damage
(8) Other failure (specify):

(9) Unknown

GLAZING

Type of Window/Windshield Glazing

15. WS 1 16. LF 2 17. RF 2 18. LR 0 19. RR 0

20. BL 6 21. Roof 0 22. Other 0

(0) No glazing
(1) AS-1 — Laminated
(2) AS-2 — Tempered
(3) AS-3 — Tempered-tinted (original)
(4) AS-2 — Tempered-with after market tint
(5) AS-3 — Tempered-tinted (with additional after market tint)
(6) AS-14 — Glass/Plastic
(7) Glazing removed prior to accident
(8) Other (specify):

(9) Unknown

Window Precrash Glazing Status

23. WS 1 24. LF 2 25. RF 2 26. LR 0 27. RR 0

28. BL 2 29. Roof 0 30. Other 0

(0) No glazing
(1) Fixed
(2) Closed
(3) Partially opened
(4) Fully opened
(7) Glazing removed prior to accident
(9) Unknown

Glazing Damage from Impact Forces

31. WS 2 32. LF 1 33. RF 1 34. LR 0 35. RR 0

36. BL 1 37. Roof 0 38. Other 0

(0) No glazing
(1) No glazing damage from impact forces
(2) Glazing in place and cracked from impact forces
(3) Glazing in place and holed from impact forces
(4) Glazing out-of-place (cracked or not) and not holed from impact forces
(5) Glazing out-of-place and holed from impact forces
(6) Glazing disintegrated from impact forces
(7) Glazing removed prior to accident
(9) Unknown if damaged

Glazing Damage from Occupant Contact

39. WS 3 40. LF 1 41. RF 1 42. LR 0 43. RR 0

44. BL 1 45. Roof 0 46. Other 0

(0) No glazing
(1) No occupant contact to glazing
(2) Glazing contacted by occupant but no glazing damage
(3) Glazing in place and cracked by occupant contact
(4) Glazing in place and holed by occupant contact
(5) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact
(6) Glazing out-of-place by occupant contact and holed by occupant contact
(7) Glazing removed prior to accident
(8) Glazing disintegrated by occupant contact
(9) Unknown if contacted by occupant

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47.___	48.___	49.___	50.___
2nd	51.___	52.___	53.___	54.___
3rd	55.___	56.___	57.___	58.___
4th	59.___	60.___	61.___	62.___
5th	63.___	64.___	65.___	66.___
6th	67.___	68.___	69.___	70.___
7th	71.___	72.___	73.___	74.___
8th	75.___	76.___	77.___	78.___
9th	79.___	80.___	81.___	82.___
10th	83.___	84.___	85.___	86.___

LOCATION OF INTRUSION

Front Seat
- (11) Left
- (12) Middle
- (13) Right

Second Seat
- (21) Left
- (22) Middle
- (23) Right

Third Seat
- (31) Left
- (32) Middle
- (33) Right

Fourth Seat
- (41) Left
- (42) Middle
- (43) Right

- (97) Catastrophic
- (98) Other enclosed area (specify) _____
- (99) Unknown

INTRUDING COMPONENT

Interior Components
- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A (A1/A2)-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Side panel - forward of the A1/A2-pillar
- (11) Door panel (side)
- (12) Side panel - rear of the B-pillar
- (13) Roof (or convertible top)
- (14) Roof side rail
- (15) Windshield
- (16) Windshield header
- (17) Window frame
- (18) Floor pan (includes sill)
- (19) Backlight header
- (20) Front seat back
- (21) Second seat back
- (22) Third seat back
- (23) Fourth seat back
- (24) Fifth seat back
- (25) Seat cushion
- (26) Back door/panel (e.g., tailgate)
- (27) Other interior component (specify): _____

NO INTRUSION

Exterior Components
- (30) Hood
- (31) Outside surface of this vehicle (specify): _____
- (32) Other exterior object in the environment (specify): _____
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): _____
- (99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 3 centimeters but < 8 centimeters
- (2) ≥ 8 centimeters but < 15 centimeters
- (3) ≥ 15 centimeters but < 30 centimeters
- (4) ≥ 30 centimeters but < 46 centimeters
- (5) ≥ 46 centimeters but < 61 centimeters
- (6) ≥ 61 centimeters
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

STEERING COLUMN

87. Steering Column Type 1
(1) Fixed column
(2) Tilt column
(3) Telescoping column
(4) Tilt and telescoping column
(8) Other column type (specify): _____
(9) Unknown

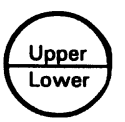
88. Tilt Steering Column Adjustment 0
(0) No tilt steering column
(1) Full up
(2) Between full up and center
(3) Center
(4) Between center and full down
(5) Full down
(9) Unknown

89. Telescoping Steering Column Adjustment 0
(0) No telescoping steering column
(1) Full back
(2) Between full back and midpoint
(3) Midpoint
(4) Between midpoint and full forward
(5) Full forward
(9) Unknown

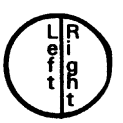
90. Steering Rim/Spoke Deformation 0 0
____Code actual measured deformation to the nearest centimeter
(00) No steering rim deformation
(01-14) Actual measured value in centimeters
(15) 15 centimeters or more
(98) Observed deformation cannot be measured
(99) Unknown

91. Location of Steering Rim/Spoke Deformation 0 0
(00) No steering rim deformation

Quarter Sections
(01) Section A
(02) Section B
(03) Section C
(04) Section D



Half Sections
(05) Upper half of rim/spoke
(06) Lower half of rim/spoke
(07) Left half of rim/spoke
(08) Right half of rim/spoke



(09) Complete steering wheel collapse
(10) Undetermined location
(99) Unknown

INSTRUMENT PANEL

92. Odometer Reading 043,000
____ kilometers
Code to the nearest 1,000 kilometers
(000) No odometer
(001) Less than 1,500 kilometers
(500) 499,500 kilometers or more
(999) Unknown
___,___ miles X 1.6093 = 42,593 kilometers

Source: _____

93. Instrument Panel Damage from Occupant Contact? 1
(0) No
(1) Yes
(9) Unknown

94. Type of Knee Bolster Covering 2
(0) No knee bolster
(1) Padded
(2) Rigid plastic
(8) Other (specify): _____
(9) Unknown

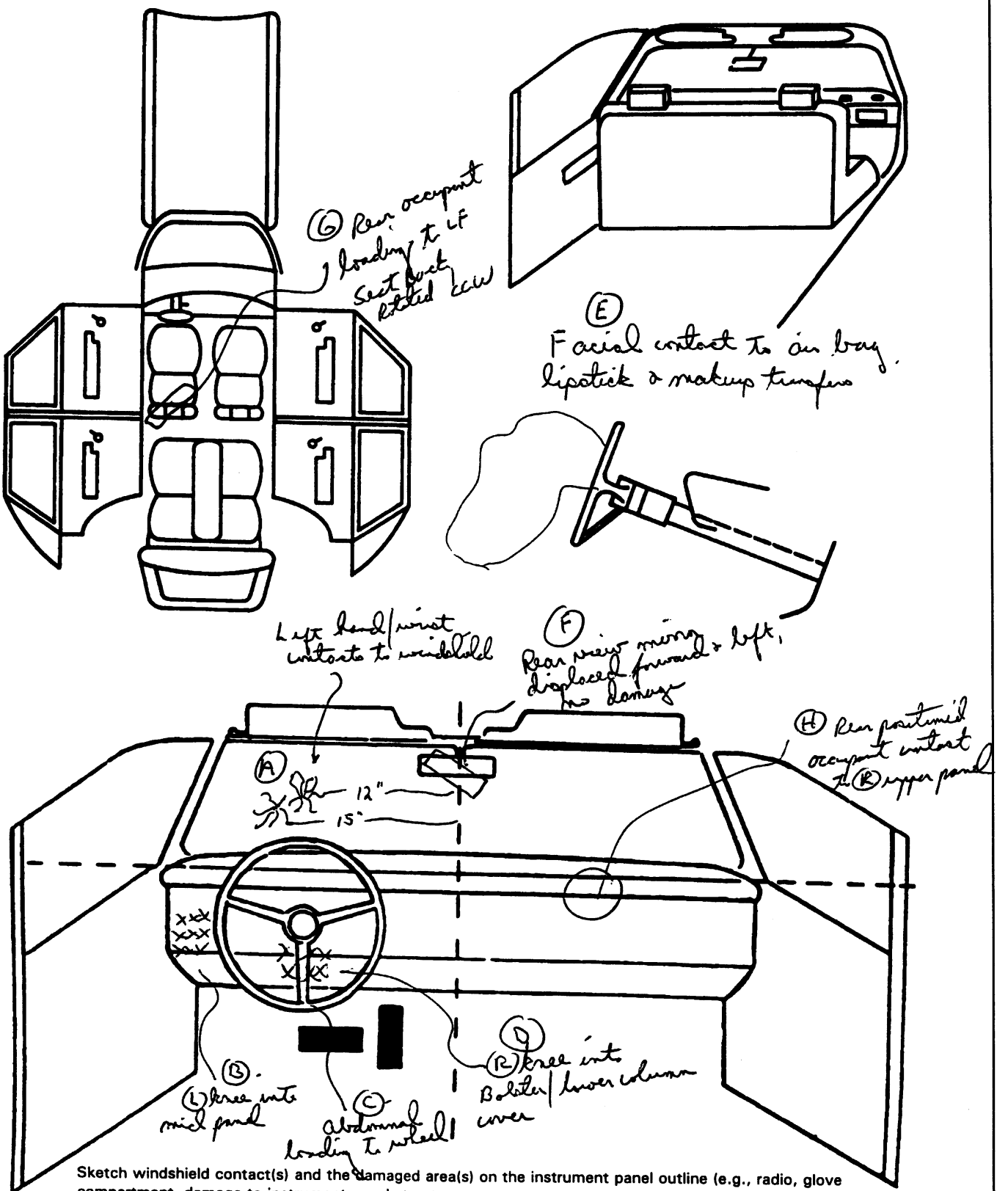
95. Knee Bolsters Deformed from Occupant Contact? 2
(0) No knee bolster
(1) No deformation
(2) Yes - deformation
(9) Unknown

96. Did Glove Compartment Door Open During Collision(s)? 2
(0) No glove compartment door
(1) No - door did not open
(2) Yes - door opened
(9) Unknown

97. Adaptive (Assistive) Driving Equipment 0
(0) No adaptive driving equipment
(1) Adaptive driving equipment installed (Check all that apply.)
[ ] Hand controls for braking/acceleration
[ ] Steering control devices (attached to OEM steering wheel
[ ] Steering knob attached to steering wheel
[ ] Low effort power steering (unit or device)
[ ] Replacement steering wheel (i.e., reduced diameter)
[ ] Joy-stick steering controls
[ ] Wheelchair tie-downs
[ ] Modification to seat belts (specify): _____
[ ] Additional or relocated switches (specify): _____
[ ] Raised roof
[ ] Wall-mounted head rest (used behind wheelchair)
[ ] Other adaptive device (specify): _____
(9) Unknown

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure.
Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.
Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	001	1	(L) hand/wrist	cracked/deformed	1
B	010	1	(L) knee	cracked/deformed	1
C	004	1	abd	EAD compression 1.8"	1
D	014	1	(R) knee	cracked/deformed	1
E	170	1	Face	make-up transfer	1
F	002	1	(R) hand/arm	(R) hand/arm deflection	1
G	151	2	Chest	Chest / rotated CCW	1
H	012	3	Face/Chest	Face/Chest/compression	1
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT
- (001) Windshield
- (002) Mirror
- (003) Sunvisor
- (004) Steering wheel rim
- (005) Steering wheel hub/spoke
- (006) Steering wheel (combination of codes 004 and 005)
- (007) Steering column,transmission selector lever, other attachment
- (008) Cellular telephone or CB radio
- (009) Add on equipment(e.g., tapedeck, air conditioner)
- (010) Left instrument panel and below
- (011) Center instrument panel and below
- (012) Right instrument panel and below
- (013) Glove compartment door
- (014) Knee bolster
- (015) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (016) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (017) Windshield reinforced by exterior object, (specify): _____
- (019) Other front object (specify): _____

LEFT SIDE
- (051) Left side interior surface, excluding hardware or armrests
- (052) Left side hardware or armrest
- (053) Left A (A1/A2)-pillar
- (054) Left B-pillar
- (055) Other left pillar (specify): _____
- (056) Left side window glass
- (057) Left side window frame
- (058) Left side window sill
- (059) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (060) Other left side object (specify): _____

RIGHT SIDE
- (101) Right side interior surface, excluding hardware or armrests
- (102) Right side hardware or armrest
- (103) Right A (A1/A2)-pillar
- (104) Right B-pillar
- (105) Other right pillar (specify): _____
- (106) Right side window glass
- (107) Right side window frame
- (108) Right side window sill
- (109) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (110) Other right side object (specify): _____

INTERIOR
- (151) Seat, back support
- (152) Belt restraint webbing/buckle
- (153) Belt restraint B-pillar or door frame attachment point
- (154) Other restraint system component (specify): _____
- (155) Head restraint system
- (160) Other occupants (specify): _____
- (161) Interior loose objects
- (162) Child safety seat (specify): _____
- (163) Other interior object (specify): _____

AIR BAG
- (170) Air bag-driver side
- (175) Air bag compartment cover-driver side
- (180) Air bag-passenger side
- (185) Air bag compartment cover-passenger side
- (190) Other air bag (specify) _____
- (195) Other air bag compartment cover (specify) _____

ROOF
- (201) Front header
- (202) Rear header
- (203) Roof left side rail
- (204) Roof right side rail
- (205) Roof or convertible top

FLOOR
- (251) Floor (including toe pan)
- (252) Floor or console mounted transmission lever, including console
- (253) Parking brake handle
- (254) Foot controls including parking brake

REAR
- (301) Backlight (rear window)
- (302) Backlight storage rack, door, etc.
- (303) Other rear object (specify): _____

ADAPTIVE (ASSISTIVE) DRIVING EQUIPMENT
- (401) Hand controls for braking/acceleration
- (402) Steering control devices (attached to OEM steering wheel)
- (403) Steering knob attached to steering wheel
- (405) Replacement steering wheel (i.e., reduced diameter)
- (406) Joy stick steering controls
- (407) Wheelchair tie-downs
- (408) Modification to seat belts, (specify): _____
- (409) Additional or relocated switches, (specify): _____
- (410) Raised roof
- (411) Wall mounted head rest (used behind wheel chair)
- (412) Other adaptive device (specify): _____

CONFIDENCE LEVEL OF CONTACT POINT
- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data **for each seat position** in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page 11.

If the vehicle has automatic restraints available, encode the appropriate data on page 6.

		Left	Center	Right
FIRST	A-Availability	4	0	4
	B-Evidence of usage	04	-	-
	C-Used in this crash?	04	-	-
	D-Proper Use	1	-	-
	E-Failure Modes	5		
	F-Anchorage Adjustment	1	-	-
SECOND	A-Availability			
	B-Evidence of usage			
	C-Used in this crash?			
	D-Proper Use			
	E-Failure Modes			
	F-Anchorage Adjustment			
OTHER	A-Availability			
	B-Evidence of usage			
	C-Used in this crash?			
	D-Proper Use			
	E-Failure Modes			
	F-Anchorage Adjustment			

A-Manual (Active) Belt System Availability

(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available - type unknown

Integral Belt Partially Destroyed

(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)
(8) Other belt (specify): _____
(9) Unknown

B/C-Manual (Active) Belt System Use

(00) None used, not available, or belt removed/destroyed
(01) Inoperable (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used - type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat - type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

D-Proper Use of Manual (Active) Belts

(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly

(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of manual belt system (specify): _____
(9) Unknown

E-Manual (Active) Belt Failure Modes During Accident

(0) No manual belt used or not available
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): c pillar, bolt from sill
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

F-Shoulder Belt Upper Anchorage Adjustment

(0) No shoulder belt
(1) No upper anchorage adjustment for shoulder belt

Adjustable shoulder Belt Upper Anchorage

(2) In full up position
(3) In mid position
(4) In full down position
(5) Position unknown
(9) Unknown if position has adjustable upper anchorage adjustment

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Frontal Air Bags--Left Front	Frontal Air Bags-Right Front	OtherAir Bag
FIRST	Availability/Function	1	0	0
	Deployment	1	0	0
	Failure	1	0	0

Air Bag System Availability/Function
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify): _____
(3) Air bag not reinstalled
(9) Unknown

Air Bag System Deployment **(This Occupant Position)**
(0) Not equipped/not available
(1) Deployed during accident (as a result of impact)
(2) Deployed inadvertently just prior to accident
(3) Deployed, accident sequence undetermined
(4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(5) Unknown if deployed
(7) Nondeployed
(9) Unknown

Are There Indications of Air Bag System Failure? (This Occupant Position)
(0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

AUTOMATIC BELTS

		Left	Right
FIRST	A-Availability/Function	0	0
	B-Use	0	0
	C-Type	0	0
	D-Proper Use	0	0
	E-Failure Modes	0	0

A-Automatic (Passive) Belt System Availability/Function
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

B-Automatic (Passive) Belt System Use
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)
(3) Automatic belt use unknown
(9) Unknown

C-Automatic (Passive) Belt System Type
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

D-Proper Use of Automatic (Passive) Belt System
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of automatic belt system (specify): _____
(9) Unknown

E-Automatic (Passive) Belt Failure Modes During Accident
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify): _____
(9) Unknown

FIRST SEAT FRONTAL AIR BAGS

NOTES: Encode the applicable data ***for the driver and first seat passenger*** in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

	Driver	Passenger
A-Type of air bag?	1	0
B-Flaps open at tear points?	2	0
C-Flaps damaged?	1	0
D-Air bag damaged?	01	0
E-Source of air bag damage	01	0
F-Air bag tethered?	2	0
G-Air bag have vent ports?	2	0
H-Other occupant contact air bag?	1	0
I-Occupant wearing eyewear?	9	0

A-Type of Air Bag
- (0) Not equipped/not available
- (1) Original manufacturer installed system
- (2) Retrofitted air bag
- (3) Replacement air bag
- (8) Unknown type of air bag
- (9) Unknown

B-Did Air Bag Module Cover Flap(s) Open At Designated Tear Points?
- (0) Not equipped/not available
- (1) No
- (2) Yes
- (3) Deployed, unknown if flap(s) opened at designated tear points
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

C-Were Air Bag Module Cover Flap(s) Damaged?
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____
- (3) Deployed, unknown if air bag module cover flap(s) damaged
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

D-Was There Damage To The Air Bag?
- (00) Not equipped/not available
- (01) Not damaged

Yes - Air Bag Damage
- (02) Ruptured
- (03) Cut
- (04) Torn
- (05) Holed
- (06) Burned
- (07) Abraded
- (88) Other damage (specify): _____
- (95) Damaged, details unknown
- (96) Deployed, unknown if damaged
- (97) Not deployed
- (98) Unknown if deployed
- (99) Unknown

E-Source of Air Bag Damage
- (00) Not equipped/not available
- (01) Not damaged
- (02) Object worn by occupant, (specify): _____
- (03) Object carried by occupant, (specify): _____
- (04) Adaptive/assistive controls, (specify): _____
- (05) Fire in vehicle
- (06) Thermal burns
- (07) Rescue or emergency efforts
- (88) Other damage source (specify): _____
- (95) Damaged, unknown source
- (96) Deployed, unknown if damaged
- (97) Not deployed
- (98) Unknown if deployed
- (99) Unknown

F-Was The Air Bag Tethered?
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify number of tether straps): 2
- (3) Deployed, unknown if tethered
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

G-Did The Air Bag Have Vent Ports?
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify number of vent ports): 2
- (3) Deployed, unknown if vent ports present
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

H-Was the Air Bag in this Occupant's Position Contacted by Another Occupant?
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____
- (3) Deployed, unknown if other occupant contact to air bag
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

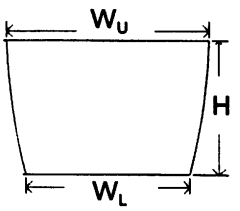
I-Was This Occupant Wearing Eye-wear?
- (0) Not equipped/not available
- (1) No
- (2) Eyeglasses/sunglasses
- (3) Contact lenses
- (4) Deployed, unknown if eyewear worn
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

DRIVER AIR BAG SKETCHES (Cont'd)

3. DRIVER AIR BAG MODULE COVER FLAP SIZE (SINGLE)

width (W_U) _____ width (W_L) _____

height (H) _____

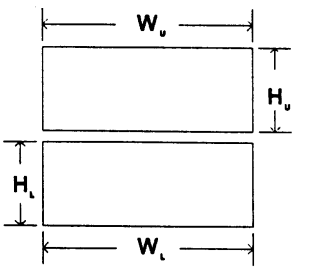


4. DRIVER AIR BAG MODULE COVER FLAP SIZE (DOUBLE)

a. Upper Flap b. Lower Flap

width (W_U) 20.8 width (W_L) 20.8

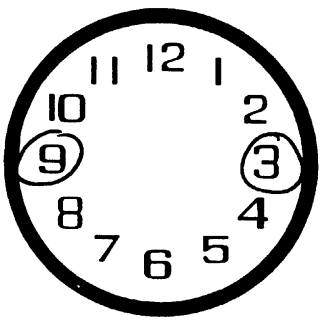
height (H_U) 7.6 height (H_L) 7.6



5. SKETCH OF OTHER TYPE OF AIR BAG MODULE FLAP AND SIZE

6. SKETCH OF OTHER TYPE OF AIR BAG VENT PORTS

7. SKETCH LOCATION OF CIRCULAR AIR BAG VENT PORTS

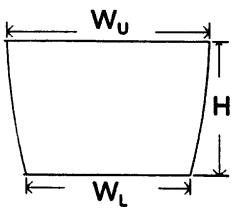


DRIVER AIR BAG SKETCHES (Cont'd)

3. DRIVER AIR BAG MODULE COVER FLAP SIZE (SINGLE)

width (W_U) _____ width (W_L) _____

height (H) _____

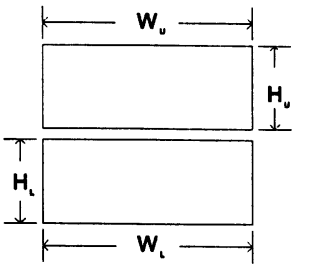


4. DRIVER AIR BAG MODULE COVER FLAP SIZE (DOUBLE)

a. Upper Flap b. Lower Flap

width (W_U) 20.8 width (W_L) 20.8

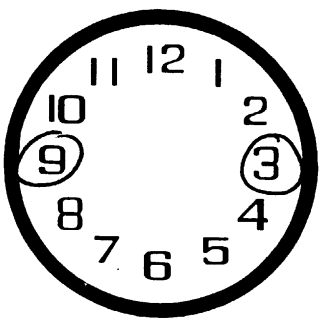
height (H_U) 7.6 height (H_L) 7.6



5. SKETCH OF OTHER TYPE OF AIR BAG MODULE FLAP AND SIZE

6. SKETCH OF OTHER TYPE OF AIR BAG VENT PORTS

7. SKETCH LOCATION OF CIRCULAR AIR BAG VENT PORTS



HEAD RESTRAINTS/SEAT EVALUATION

NOTES: **Encode the applicable data for each seat position in the vehicle. The attribute for these variables may be found on the next page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.**

		Left	Center	Right
FIRST	A-Head Restraint Type/Damage	3	-	3
	B-Seat Type	02	-	02
	C-Seat Orientation	1	-	1
	D-Seat Track Position	9	-	9
	E-Seat Back Incline Pre/Post Impact	23	-	23
	F-Seat Performance	5	-	1
SECOND	A-Head Restraint Type/Damage			
	B-Seat Type			
	C-Seat Orientation			
	D-Seat Track Position			
	E-Seat Back Incline Pre/Post Impact			
	F-Seat Performance			
THIRD	A-Head Restraint Type/Damage			
	B-Seat Type			
	C-Seat Orientation			
	D-Seat Track Position			
	E-Seat Back Incline Pre/Post Impact			
	F-Seat Performance			
OTHER	A-Head Restraint Type/Damage			
	B-Seat Type			
	C-Seat Orientation			
	D-Seat Track Position			
	E-Seat Back Incline Pre/Post Impact			
	F-Seat Performance			

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE

(I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

HEAD RESTRAINTS/SEAT EVALUATION

A-Head Restraint Type/Damage by Occupant at This Occupant Position
(0) No head restraints
(1) Integral — no damage
(2) Integral — damaged during accident
(3) Adjustable — no damage
(4) Adjustable — damaged during accident
(5) Add-on — no damage
(6) Add-on — damaged during accident
(8) Other Specify):_____
(9) Unknown

B-Seat Type (this Occupant Position)
(00) Occupant not seated or no seat
(01) Bucket
(02) Bucket with folding back
(03) Bench
(04) Bench with separate back cushions
(05) Bench with folding back(s)
(06) Split bench with separate back cushions
(07) Split bench with folding back(s)
(08) Pedestal (i.e., column supported)
(09) Box mounted seat (i.e., van type)
(10) Other seat type (specify):
_____
(99) Unknown

C-Seat Orientation (this Occupant Position)
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):
_____
(9) Unknown

D-Seat Track Adjusted Position Prior To Impact
(0) Occupant not seated or no seat
(1) Non-adjustable seat track

Adjustable Seat Track
(2) Seat at forward most track position
(3) Seat between forward most and middle track positions
(4) Seat at middle track position
(5) Seat between middle and rear most track positions
(6) Seat at rear most track position
(9) Unknown

E-Seat Back Incline Prior and Post Impact
(00) Occupant not seated or no seat
(01) Not adjustable

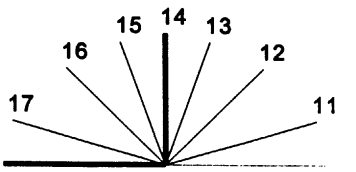
Upright prior to impact
(11) Moved to completely rearward position
(12) Moved to rearward midrange position
(13) Moved to slightly rearward position
(14) Retained pre-impact position
(15) Moved to slightly forward position
(16) Moved to forward midrange position
(17) Moved to completely forward position

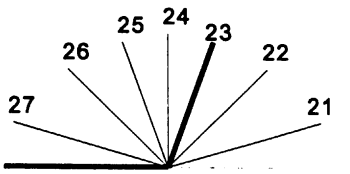
Slightly reclined prior to impact
(21) Moved to completely rearward position
(22) Moved to rearward midrange position
(23) Retained pre-impact postion
(24) Moved to upright position
(25) Moved to slightly forward position
(26) Moved to forward midrange position
(27) Moved to completely forward position

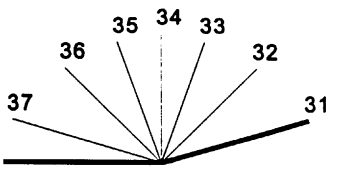
Completely reclined prior to impact
(31) Retained pre-impact position
(32) Moved to rearward midrange position
(33) Moved to slightly rearward position
(34) Moved to upright position
(35) Moved to slightly forward position
(36) Moved to forward midrange position
(37) Moved to completely forward position

(99) Unknown

F-Seat Performance (this Occupant Position)
(0) Occupant not seated or no seat
(1) No seat performance failure(s)
(2) Seat adjusters failed
(3) Seat back folding locks or "seat back" failed (specify):
_____
(4) Seat tracks/anchors failed
(5) Deformed by impact of occupant
(6) Deformed by passenger compartment intrusion (specify):_____
(7) Combination of above (specify):
_____
(8) Other (specify):
_____
(9) Unknown







Coding diagrams for *Seat Back Incline Position Prior and Post Impact*

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

   (0) No child safety seat
   (1) Infant seat
   (2) Toddler seat
   (3) Convertible seat
   (4) Booster seat
   (7) Other type child safety seat (specify):

   _____

   (8) Unknown child safety seat type
   (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

   (00) No child safety seat

   Designed for Rear Facing for This Age/Weight
   (01) Rear facing
   (02) Forward facing
   (08) Other orientation (specify):

   _____

   (09) Unknown orientation

   Designed for Forward Facing for This Age/Weight
   (11) Rear facing
   (12) Forward facing
   (18) Other orientation (specify):

   _____

   (19) Unknown orientation

   Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
   (21) Rear facing
   (22) Forward facing
   (28) Other orientation (specify):

   _____

   (29) Unknown orientation

   (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

5. Child Safety Seat Tether Usage
   Note: Options Below Are Used for Variables 3-5.

   (00) No child safety seat

   Not Designed with Harness/Shield/Tether
   (01) After market harness/shield/tether added, not used
   (02) After market harness/shield/tether used
   (03) Child safety seat used, but no after market harness/shield/tether added
   (09) Unknown if harness/shield/tether added or used

   Designed With Harness/Shield/Tether
   (11) Harness/shield/tether not used
   (12) Harness/shield/tether used
   (19) Unknown if harness/shield/tether used

   Unknown If Designed With Harness/Shield/Tether
   (21) Harness/shield/tether not used
   (22) Harness/shield/tether used
   (29) Unknown if harness/shield/tether used

   (99) Unknown if child safety seat used

6. Child Safety Seat Make/Model
   (Specify make/model and occupant number)

   _____

   _____

   _____

   _____

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

EJECTION No [✓] Yes [ ]

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number	01	02	03			
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection
(1) Complete ejection
(2) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.) (specify): _____
(9) Unknown

Ejection Medium
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown

Medium Status (Immediately Prior to Impact)
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No [✓] Yes [ ]

Describe entrapment mechanism: _____

Component(s): _____

(Note on vehicle interior sketch)

ATTACHMENT F:

NASS Occupant Forms

U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____

2. Case Number - Stratum 94-41

3. Vehicle Number 01

4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 31
Code actual age at time of accident.
(00) Less than one year old (specify by month): _____
(97) 97 years and older
(99) Unknown

6. Occupant's Sex 2
(1) Male
(2) Female-not reported pregnant
(3) Female-pregnant-1st trimester(1st-3rd month)
(4) Female-pregnant-2nd trimester(4th-6th month)
(5) Female-pregnant-3rd trimester(7th-9th month)
(6) Female-pregnant-term unknown
(9) Unknown

7. Occupant's Height 153
Code actual height to the nearest centimeter.
(999) Unknown

__ __ inches X 2.54 = __ __ __ centimeters

8. Occupant's Weight 050
Code actual weight to the nearest kilogram.
(999) Unknown

__ __ __ pounds X .4536 = __ __ __ kilograms

9. Occupant's Role 1
(1) Driver
(2) Passenger
(9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position 11
Front Seat
(11) Left side
(12) Middle
(13) Right side
(14) Other (specify): _____
(15) On or in the lap of another occupant

Second Seat
(21) Left side
(22) Middle
(23) Right side
(24) Other (specify): _____
(25) On or in the lap of another occupant

Third Seat
(31) Left side
(32) Middle
(33) Right side
(34) Other (specify): _____
(35) On or in the lap of another occupant

Fourth Seat
(41) Left side
(42) Middle
(43) Right side
(44) Other (specify): _____
(45) On or in the lap of another occupant

(97) In or on unenclosed area
(98) Other seat (specify): _____
(99) Unknown

11. Occupant's Posture 0
(0) Normal posture

Abnormal posture
(1) Kneeling or standing on seat
(2) Lying on or across seat
(3) Kneeling, standing or sitting in front of seat
(4) Sitting sideways or turned to talk with another occupant or to look out a rear window
(5) Sitting on a console
(6) Lying back in a reclined seat position
(7) Bracing with feet or hands on a surface in front of seat
(8) Other abnormal posture (specify): _____
(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0
    (0) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area 0
    (0) No ejection
    (1) Windshield
    (2) Left front
    (3) Right front
    (4) Left rear
    (5) Right rear
    (6) Rear
    (7) Roof
    (8) Other area (e.g., back of pickup, etc.) (specify):_____
    (9) Unknown

14. Ejection Medium 0
    (0) No ejection
    (1) Door/hatch/tailgate
    (2) Nonfixed roof structure
    (3) Fixed glazing
    (4) Nonfixed glazing (specify):
    _____
    (5) Integral structure
    (8) Other medium (specify):
    _____
    (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0
    (0) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment 0
    (0) Not entrapped/exit not inhibited
    (1) Entrapped/pinned - mechanically restrained
    (2) Could not exit vehicle due to jammed doors, fire, etc.
    (specify):_____
    _____
    (9) Unknown

17. Occupant Mobility 2
    (0) Occupant fatal before removed from vehicle
    (1) Removed from vehicle while unconscious or not oriented to time or place
    (2) Removed from vehicle due to perceived serious injuries
    (3) Exited vehicle with some assistance
    (4) Exited vehicle under own power
    (5) Occupant fully ejected
    (8) Removed from vehicle for other reasons (specify): _____
    (9) Unknown

BELT SYSTEM FUNCTION

18. Manual (Active) Belt System Availability — 4
(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available—type unknown

Integral Belt Partially Destroyed
(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)
(8) Other belt (specify):

(9) Unknown

19. Manual (Active) Belt System Use — 04
(00) None used, not available, or belt removed/destroyed
(01) Inoperative (specify):

(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used—type unknown
(08) Other belt used (specify):

(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat—type unknown
(18) Other belt used with child safety seat (specify):
(99) Unknown if belt used

20. Proper Use of Manual (Active) Belts — 1
(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly
(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of manual belt system (specify):

(9) Unknown

21. Manual (Active) Belt Failure Modes During Accident — 5
(0) No manual belt used or not available
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

22. Manual Shoulder Belt Upper Anchorage Adjustment — 1
(0) No manual shoulder belt
(1) No upper anchorage adjustment for manual shoulder belt

Adjustable shoulder Belt Upper Anchorage
(2) In full up position
(3) In mid position
(4) In full down position
(5) Position unknown
(9) Unknown if position has adjustable upper anchorage adjustment

23. Automatic (Passive) Belt System Availability/ Function — 0
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

24. Automatic (Passive) Belt System Use — 0
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):
(3) Automatic belt use unknown
(9) Unknown

25. Automatic (Passive) Belt System Type — 0
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

26. Proper Use of Automatic (Passive) Belt System — 0
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):
(9) Unknown

27. Automatic (Passive) Belt Failure Modes During Accident — 0
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

POLICE REPORTED RESTRAINT USE

28. Police Reported Belt Use 0
    (0) None used
    (1) Police did not indicate belt use
    (2) Shoulder belt
    (3) Lap belt
    (4) Lap and shoulder belt
    (5) Belt used, type not specified
    (6) Child safety seat
    (7) Automatic belt
    (8) Other type belt, (specify):

    _____

    (9) Police indicated "unknown"

29. Police Reported Air Bag Availability/Function 1
    (0) No air bag available
    (1) Police did not indicate air bag availability/function
    (2) Deployed
    (3) Not deployed
    (4) Unknown if deployed
    (9) Police indicated "unknown"

Check the Primary Source Used In Determining Belt Use.

[ ] Vehicle inspection
[ ] Official injury data
[ ] Driver/occupant interview
[ ] Other (specify):

    _____

[ ] Unknown if belt used

AIR BAG SYSTEM FUNCTION

30. Frontal Air Bag System Availability/Function (This Occupant Position) 1
    (0) Not equipped/not available
    (1) Air bag

    Non-functional
    (2) Air bag disconnected (specify):

    _____

    (3) Air bag not reinstalled
    (9) Unknown

31. Frontal Air Bag System Deployment (This Occupant Position) 1
    (0) Not equipped/not available
    (1) Deployed during accident (as a result of impact)
    (2) Deployed inadvertently just prior to accident
    (3) Deployed, details unknown
    (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
    (5) Unknown if deployed
    (7) Nondeployed
    (9) Unknown

32. Other Than First Seat Frontal Air Bag Availability/Function (This Occupant Position) 0
    (0) Not equipped/not available
    (1) Air bag

    Non-functional
    (2) Air bag disconnected (specify):

    _____

    (3) Air bag not reinstalled
    (9) Unknown

    Specify type of "other" air bag present:

    _____

33. Air Bag(s) Deployment, Other Than First Seat Frontal (This Occupant Position) 0
    (0) Not equipped with an "other" air bag
    (1) Deployed during accident (as a result of impact)
    (2) Deployed inadvertently just prior to accident
    (3) Deployed, details unknown
    (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
    (5) Unknown if deployed
    (7) Nondeployed
    (9) Unknown

34. Are There Indications of Air Bag System Failure? (This Occupant Position) 1
    (0) Not equipped/not available
    (1) No
    (2) Yes (specify):

    _____

    (9) Unknown

FIRST SEAT FRONTAL AIR BAG SYSTEM EVALUATION

35. Had Vehicle Been in Previous Accident(s)? 1
(0) Not equipped/not available
(1) No previous accidents

Yes
(2) Previous accident(s) without deployment(s)
(3) One previous accident with deployment
(4) More than one previous accident with at least one deployment
(8) Previous accidents, unknown deployment status
(9) Unknown

36. Type of Air Bag 1
(0) Not equipped/not available
(1) Original manufacturer installed system
(2) Retrofitted air bag
(3) Replacement air bag
(8) Unknown type of air bag
(9) Unknown

37. Had Any Prior Maintenance/Service Been Performed On This Air Bag System? 1
(0) Not equipped/not available
(1) No prior maintenance
(2) Yes, prior maintenance (specify):
_____
(9) Unknown

38. Air Bag Deployment Accident Event Sequence Number 01
(00) Not equipped/not available
_____ Code the accident event sequence number that initiated the air bag deployment
(96) Deployed, unknown event
(97) Not deployed
(98) Unknown if deployed
(99) Unknown

39. CDC For Air Bag Deployment Impact 1
(0) Not equipped/not available
(1) Highest delta V
(2) Second highest delta V
(3) Other non-coded delta V (specify):
_____
(6) Deployed, unknown event
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

40. Longitudinal Component of Delta V For Air Bag Deployment Impact +0035
(_000) Not equipped/not available
Code the value of the delta V for the impact that initiated the air bag deployment
(_996) Deployment, unknown longitudinal Delta V
(_997) Not deployed
(_998) Unknown if deployed
(_999) Unknown

41. Did Air Bag Module Cover Flap(s) Open At Designated Tear Points? 2
(0) Not equipped/not available
(1) No
(2) Yes
(3) Deployed, unknown if flap(s) opened at designated tear points
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

42. Were Air Bag Module Cover Flap(s) Damaged? 1
(0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(3) Deployed, unknown if air bag module cover flap(s) damaged
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

43. Was There Damage To The Air Bag? 01
(00) Not equipped/not available
(01) Not damaged

Yes - Air Bag Damage
(02) Ruptured
(03) Cut
(04) Torn
(05) Holed
(06) Burned
(07) Abraded
(88) Other damage (specify):
_____
(95) Damaged, details unknown
(96) Deployed, unknown if damaged
(97) Not deployed
(98) Unknown if deployed
(99) Unknown

FIRST SEAT FRONTAL AIR BAG SYSTEM EVALUATION *continued*

44. Source of Air Bag Damage 01
(00) Not equipped/not available
(01) Not damaged
(02) Object worn by occupant, (specify):
(03) Object carried by occupant, (specify):
(04) Adaptive/assistive controls, (specify):
(05) Fire in vehicle
(06) Thermal burns
(07) Rescue or emergency efforts
(88) Other damage source (specify):
(95) Damaged, unknown source
(96) Deployed, unknown if damaged
(97) Not deployed
(98) Unknown if deployed
(99) Unknown

45. Was The Air Bag Tethered? 2
(0) Not equipped/not available
(1) No
(2) Yes (specify number of tether straps): 2
(3) Deployed, unknown if tethered
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

46. Did The Air Bag Have Vent Ports? 2
(0) Not equipped/not available
(1) No
(2) Yes (specify number of vent ports): 2
(3) Deployed, unknown if vent ports present
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

47. Was the Air Bag in this Occupant's Position Contacted by Another Occupant? 1
(0) Not equipped/not available
(1) No
(2) Yes (specify):
(3) Deployed, unknown if other occupant contact to air bag
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

48. Was This Occupant Wearing Eye-wear? 9
(0) Not air bag equipped/air bag not available
(1) No
(2) Eyeglasses/sunglasses
(3) Contact lenses
(4) Deployed, unknown if eyewear worn
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

HEAD RESTRAINT AND SEAT EVALUATION

49. Head Restraint Type/Damage by Occupant at This Occupant Position 3
(0) No head restraints
(1) Integral—no damage
(2) Integral—damaged during accident
(3) Adjustable—no damage
(4) Adjustable—damaged during accident
(5) Add-on—no damage
(6) Add-on—damaged during accident
(8) Other (specify):
(9) Unknown

50. Seat Type (this Occupant Position) 02
(00) Occupant not seated or no seat
(01) Bucket
(02) Bucket with folding back
(03) Bench
(04) Bench with separate back cushions
(05) Bench with folding back(s)
(06) Split bench with separate back cushions
(07) Split bench with folding back(s)
(08) Pedestal (i.e., column supported)
(09) Box mounted seat (i.e., van type)
(10) Other seat type (specify):
(99) Unknown

51. Seat Orientation (this Occupant Position) 1
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):
(9) Unknown

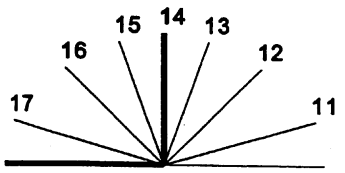
52. Seat Track Adjusted Position Prior To Impact 9
(0) Occupant not seated or no seat
(1) Non-adjustable seat track

Adjustable Seat Track
(2) Seat at forward most track position
(3) Seat between forward most and middle track positions
(4) Seat at middle track position
(5) Seat between middle and rear most track positions
(6) Seat at rear most track position
(9) Unknown

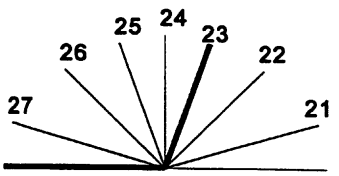
HEAD RESTRAINT AND SEAT EVALUATION *continued*

53. Seat Back Incline Prior and Post Impact 23
    (00) Occupant not seated or no seat
    (01) Not adjustable

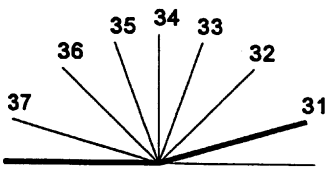
Upright prior to impact
    (11) Moved to completely rearward position
    (12) Moved to rearward midrange position
    (13) Moved to slightly rearward position
    (14) Retained pre-impact position
    (15) Moved to slightly forward position
    (16) Moved to forward midrange position
    (17) Moved to completely forward position



Slightly reclined prior to impact
    (21) Moved to completely rearward position
    (22) Moved to rearward midrange position
    (23) Retained pre-impact position
    (24) Moved to upright position
    (25) Moved to slightly forward position
    (26) Moved to forward midrange position
    (27) Moved to completely forward position



Completely reclined prior to impact
    (31) Retained pre-impact position
    (32) Moved to rearward midrange position
    (33) Moved to slightly rearward position
    (34) Moved to upright position
    (35) Moved to slightly forward position
    (36) Moved to forward midrange position
    (37) Moved to completely forward position



    (99) Unknown

54. Seat Performance (this Occupant Position) 5
    (0) Occupant not seated or no seat
    (1) No seat performance failure(s)
    (2) Seat adjusters failed
    (3) Seat back folding locks or "seat back" failed (specify):_____
    (4) Seat track/anchors failed
    (5) Deformed by impact of occupant
    (6) Deformed by passenger compartment intrusion, (specify):_____
    (7) Combination of above (specify):_____
    (8) Other (specify): _____
    (9) Unknown

CHILD SAFETY SEAT

55. Child Safety Seat Make/Model 0 0 0
(000) No child safety seat
Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
(950) Built-in child safety seat
(997) Other make/model (specify): _____
(998) Unknown make/model
(999) Unknown if child safety seat used

56. Type of Child Safety Seat 0
(0) No child safety seat
(1) Infant seat
(2) Toddler seat
(3) Convertible seat
(4) Booster seat - with shield
(5) Booster seat - without shield
(7) Other type child safety seat (specify): _____
(8) Unknown child safety seat type
(9) Unknown if child safety seat used

57. Child Safety Seat Orientation 0 0
(00) No child safety seat

Designed for Rear Facing for This Age/Weight
(01) Rear facing
(02) Forward facing
(08) Other orientation (specify): _____
(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
(11) Rear facing
(12) Forward facing
(18) Other orientation (specify): _____
(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
(21) Rear facing
(22) Forward facing
(28) Other orientation (specify): _____
(29) Unknown orientation

(99) Unknown if child safety seat used

58. Child Safety Seat Harness Usage 0 0

59. Child Safety Seat Shield Usage 0 0

60. Child Safety Seat Tether Usage 0 0

Note: Options below applicable to Variables 0A58-0A60.
(00) No child safety seat

Not Designed With Harness/Shield/Tether
(01) After market harness/shield/tether added, not used
(02) After market harness/shield/tether used
(03) Child safety seat used, but no after market harness/shield/tether added
(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether
(11) Harness/shield/tether not used
(12) Harness/shield/tether used
(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether
(21) Harness/shield/tether not used
(22) Harness/shield/tether used
(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES

61. Injury Severity (Police Rating) 4

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury
(4) K - Killed
(5) U - Injury, severity unknown
(6) Died prior to accident
(9) Unknown

62. Treatment - Mortality 1

(0) No treatment
(1) Fatal
(2) Fatal - ruled disease (specify):

_____

Nonfatal
(3) Hospitalization
(4) Transported and released
(5) Treatment at scene - nontransported
(6) Treatment later
(7) Treatment - other (specify):

_____

(8) Transported to a medical facility-unknown if treated
(9) Unknown

63. Type Of Medical Facility (for Initial Treatment) 2

(0) Not treated at a medical facility
(1) Trauma center
(2) Hospital
(3) Medical clinic
(4) Physician's office
(5) Treatment later at medical facility
(8) Other (specify):

_____

(9) Unknown

64. Hospital Stay ___

(00) Not Hospitalized
_____Code the number of days (up through 60) that the occupant stayed in hospital.
(61) 61 days or more
(99) Unknown

65. Working Days Lost 62

_____Code the number of days (up through 60) that the occupant lost from work due to the accident
(00) No working days lost
(61) 61 days or more
(62) Fatally injured
(97) Not working prior to accident
(99) Unknown

STOP WORK HERE

VARIABLES 66-74

TO BE CODED BY THE ZONE CENTER

TO BE CODED BY THE ZONE CENTER

INJURY CONSEQUENCES

66. Time to Death — 03
_____Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 +n up through 30 days = 60)
(00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

67. 1st Medically Reported Cause of Death — 01

68. 2nd Medically Reported Cause of Death — 00

69. 3rd Medically Reported Cause of Death — 00
_____Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
(00) Not fatal or no additional causes
(96) Mode of death given but specific injuries are not linked to cause of death. (specify):
_____
(97) Other result (includes fatal ruled disease) (specify):
_____
(99) Unknown

70. Number of Recorded Injuries for This Occupant — 11
_____Code the actual number of injuries recorded for this occupant.
(00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

TRAUMA DATA

71. Glasgow Coma Scale (GCS) Score (at Medical Facility) — 02
(00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

72. Was the Occupant Given Blood? — 2
(1) No - blood not given
(2) Yes - blood given
(specify units): 37
(9) Unknown if blood given

73. Arterial Blood Gases (ABG) – HCO_3 — 01
(00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO_3
(96) ABGs reported , HCO_3 unknown
(97) Injured, details unknown
(99) Unknown if injured

BELT USE DETERMINATION

74. Primary Source of Belt Use Determination — 1
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Vehicle inspection
(2) Official injury data
(3) Driver/occupant interview
(8) Other (specify):_____
(9) Unknown if belt used

BEST AVAILABLE

U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021
NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number	
2. Case Number - Stratum	94-41
3. Vehicle Number	01
4. Occupant Number	01

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	A.I.S. - 90 Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
1st	5. 2	6. 5	7. 4	8. 18	9. 28	10. 5	11. 1	12. 004	13. 1	14. 1	15. 00
2nd	16. 2	17. 5	18. 4	19. 42	20. 26	21. 4	22. 2	23. 004	24. 1	25. 1	26. 00
3rd	27. 2	28. 2	29. 9	30. 02	31. 02	32. 1	33. 8	34. 170	35. 1	36. 1	37. 00
4th	38. 2	39. 2	40. 9	41. 04	42. 02	43. 1	44. 2	45. 170	46. 1	47. 1	48. 00
5th	49. 2	50. 4	51. 9	52. 04	53. 02	54. 1	55. 2	56. 152	57. 1	58. 1	59. 00
6th	60. 2	61. 7	62. 9	63. 06	64. 02	65. 1	66. 1	67. 001	68. 1	69. 1	70. 00
7th	71. 2	72. 7	73. 9	74. 04	75. 02	76. 1	77. 2	78. 001	79. 1	80. 1	81. 00
8th	82. 2	83. 7	84. 9	85. 02	86. 02	87. 1	88. 2	89. 001	90. 1	91. 1	92. 00
9th	93. 2	94. 7	95. 9	96. 02	97. 02	98. 1	99. 1	100. 170	101. 1	102. 1	103. 00
10th	104. 2	105. 7	106. 9	107. 04	108. 02	109. 1	110. 1	111. 170	112. 1	113. 1	114. 00

BEST AVAILABLE

OCCUPANT INJURY DATA

	Source of Injury Data	A.I.S. - 90 Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
11th	2	5	9	02	02	1	9	004	1	1	00
12th											
13th											
14th											
15th											
16th											
17th											
18th											
19th											
20th											
21st											
22nd											
23rd											
24th											
25th											

OCCUPANT INJURY CLASSIFICATION

Body Region

(1) Head
(2) Face
(3) Neck
(4) Thorax
(5) Abdomen
(6) Spine
(7) Upper Extremity
(8) Lower Extremity
(9) Unspecified

Type of Anatomic Structure

(1) Whole Area
(2) Vessels
(3) Nerves
(4) Organs (includes Muscles/ligaments)
(5) Skeletal (includes joints)
(6) Head - LOC
(9) Skin

Specific Anatomic Structure

Vessels, Nerves, Organs, Bones, Joints are assigned consecutive two digit numbers beginning with 02.

The exceptions to this rule apply to:

Whole Area
(02) Skin - Abrasion
(04) Skin - Contusion
(06) Skin - Laceration
(08) Skin - Avulsion
(10) Amputation
(20) Burn
(30) Crush
(40) Degloving
(50) Injury - NFS
(90) Trauma, other than mechanical

Head - LOC
(02) Length of LOC

(04) Level
(06) of
(08) Consciousness

(10) Concussion

Spine
(02) Cervical
(04) Thoracic
(06) Lumbar

Level of Injury

Specific injuries are assigned consecutive two-digit numbers beginning with 02.

To the extent possible, within the organizational framework of the AIS, 00 is assigned to an injury NFS as to severity or where only one injury is given in the dictionary for that anatomic structure. 99 is assigned to any injury NFS as to lesion or severity.

Abbreviated Injury Scale

(1) Minor Injury
(2) Moderate Injury
(3) Serious Injury
(4) Severe Injury
(5) Critical Injury
(6) Maximum (untreatable)
(7) Injured, unknown severity

Aspect

(1) Right
(2) Left
(3) Bilateral
(4) Central
(5) Anterior
(6) Posterior
(7) Superior
(8) Inferior
(9) Unknown
(0) Whole region

SOURCE OF INJURY DATA

OFFICIAL RECORDS
(1) Autopsy records with or without hospital/medical records
(2) Hospital/medical records other than emergency room (e.g., discharge summary)
(3) Emergency room records only (including associated X-rays or other lab reports)
(4) Private physician, walk-in or emergency clinic

UNOFFICIAL RECORDS
(5) Lay coroner report
(6) E.M.S. personnel
(7) Interviewee
(8) Other source (specify):

(9) Police

INJURY SOURCE CONFIDENCE LEVEL

(1) Certain
(2) Probable
(3) Possible
(9) Unknown

DIRECT INDIRECT INJURY

(1) Direct contact injury
(2) Indirect contact injury
(3) Noncontact injury
(7) Injured, unknown source

INJURY SOURCES

FRONT
(001) Windshield
(002) Mirror
(003) Sunvisor
(004) Steering wheel rim
(005) Steering wheel hub/spoke
(006) Steering wheel (combination of codes 004 and 005)
(007) Steering column, transmission selector lever, other attachment
(008) Cellular telephone or CB radio
(009) Add on equipment (e.g., tape deck, air conditioner)
(010) Left instrument panel and below
(011) Center instrument panel and below
(012) Right instrument panel and below
(013) Glove compartment door
(014) Knee bolster
(015) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
(016) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
(017) Windshield reinforced by exterior object (specify) _____
(019) Other front object (specify): _____

LEFT SIDE
(051) Left side interior surface, excluding hardware or armrests
(052) Left side hardware or armrest
(053) Left A (A1/A2)-pillar
(054) Left B-pillar
(055) Other left pillar (specify): _____
(056) Left side window glass
(057) Left side window frame
(058) Left side window sill
(059) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(060) Other left side object (specify): _____

RIGHT SIDE
(101) Right side interior surface, excluding hardware or armrests
(102) Right side hardware or armrest
(103) Right A (A1/A2)-pillar
(104) Right B-pillar
(105) Other right pillar (specify): _____
(106) Right side window glass
(107) Right side window frame
(108) Right side window sill
(109) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(110) Other right side object (specify): _____

INTERIOR
(151) Seat, back support
(152) Belt restraint webbing/buckle
(153) Belt restraint B-pillar or door frame attachment point
(154) Other restraint system component (specify): _____
(155) Head restraint system
(160) Other occupants (specify): _____
(161) Interior loose objects
(162) Child safety seat (specify): _____
(163) Other interior object (specify): _____

AIR BAG
(170) Air bag-driver side
(171) Air bag-driver side and eyewear
(172) Air bag-driver side and jewelry
(173) Air bag-driver side and object held
(174) Air bag-driver side and object in mouth
(175) Air bag compartment cover-driver side
(176) Air bag compartment cover-driver side and eyewear
(177) Air bag compartment cover-driver side and jewelry
(178) Air bag compartment cover-driver side and object held
(179) Air bag compartment cover-driver side and object in mouth
(180) Air bag-passenger side
(181) Air bag-passenger side and eyewear
(182) Air bag-passenger side and jewelry
(183) Air bag-passenger side and object held
(184) Air bag-passenger side and object in mouth
(185) Air bag compartment cover-passenger side
(186) Air bag compartment cover-passenger side and eyewear
(187) Air bag compartment cover-passenger side and jewelry
(188) Air bag compartment cover-passenger side and object held
(189) Air bag compartment cover-passenger side and object in mouth
(190) Other air bag (specify) _____
(195) Other air bag compartment cover (specify) _____

ROOF
(201) Front header
(202) Rear header
(203) Roof left side rail
(204) Roof right side rail
(205) Roof or convertible top

FLOOR
(251) Floor (including toe pan)
(252) Floor or console mounted transmission lever, including console
(253) Parking brake handle
(254) Foot controls including parking brake

REAR
(301) Backlight (rear window)
(302) Backlight storage rack, door, etc.
(303) Other rear object (specify): _____

ADAPTIVE (ASSISTIVE) DRIVING EQUIPMENT
(401) Hand controls for braking/acceleration
(402) Steering control devices (attached to OEM steering wheel)
(403) Steering knob attached to steering wheel
(405) Replacement steering wheel (i.e., reduced diameter)
(406) Joy stick steering controls
(407) Wheelchair tie-downs
(408) Modification to seat belts, (specify): _____
(409) Additional or relocated switches, (specify): _____
(410) Raised roof
(411) Wall mounted head rest (used behind wheel chair)
(412) Other adaptive device (specify): _____

EXTERIOR of OCCUPANT'S VEHICLE
(451) Hood
(452) Outside hardware (e.g., outside mirror, antenna)
(453) Other exterior surface or tires (specify): _____
(454) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE
(501) Front bumper
(502) Hood edge
(503) Other front of vehicle (specify): _____
(504) Hood
(505) Hood ornament
(506) Windshield, roof rail, A-pillar
(507) Side surface
(508) Side mirrors
(509) Other side protrusions (specify): _____
(510) Rear surface
(511) Undercarriage
(512) Tires and wheels
(513) Other exterior of other motor vehicle (specify): _____
(514) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT
(551) Ground
(598) Other vehicle or object (specify): _____
(599) Unknown vehicle or object

NONCONTACT INJURY
(601) Fire in vehicle
(602) Flying glass
(603) Other noncontact injury source (specify): _____
(604) Air bag exhaust gases
(697) Injured, unknown source

OFFICIAL INJURY DATA SOFT TISSUE INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

Restrained?

___ No

___ Yes

Blood Alcohol Level (mg/dl)

BAL = ____

Glasgow Coma Scale Score

GCSS = ____

Units of Blood Given

Units = ____

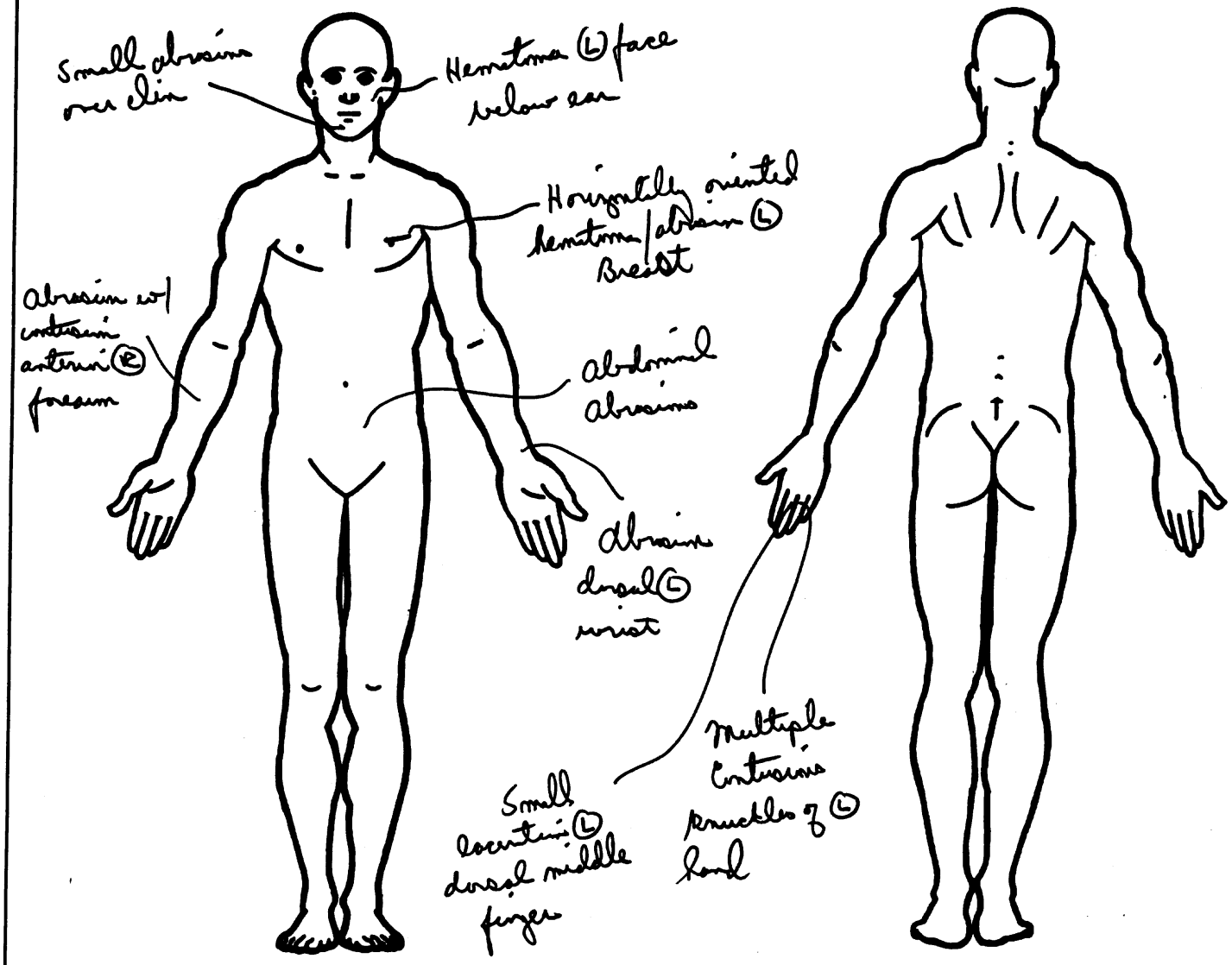
Arterial Blood Gases

pH = __.__

PO_2 = ____

PCO_2 ____

HCO_3 ____



Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)